A CLINICAL STUDY ON

"KABHA PEENISAM"

WITH

"PERUNJCHIRAKA CHOORANAM"

Dissertation Submitted To

THE TAMIL NADU Dr. M.G.R. Medical University

Chennai – 32

For the Partial fulfillment for the Award of Degree of

DOCTOR OF MEDICINE (SIDDHA)

(Branch – I, POTHU MARUTHUVAM)

DEPARTMENT OF POTHU MARUTHUVAM

Government Siddha Medical College

Palayamkottai – 627 002.

OCTOBER – 2016

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BONAFIDE CERTIFICATE

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Dissertation Topic	A Clinical Study on **"Kabhapeenisam"** with evaluation of trial drug **"Perunjchirakachoornam"**
Documents Filed	1) Protocol 2) Data Collection Forms 3)Patient Information Sheet 4) Consent Form
Clinical / Non ClinicalTrial Protocol	Clinical Trial Protocol
Informed Consent Document	Yes
Any other Documents	Case Sheet, Investigation Documents
Date of IEC Approval & its Number	GSMC-II-IEC/2015-Br.-I/05/16.07.2015

We approve the trial to be conducted in its presented form.

The Institutional Ethical Committee expects to be informed about the process report to be submitted to the IEC atleast annually of the study, any changes in the protocol and submission of final report.

Chairman
(Prof. Dr. M. Logamanian) 16/7/15

Member Secretary
(Prof. Dr. S. Soundararajan)

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Certificate of Botanical Authenticity

Certified the following plant drugs used in Siddha formulation Perunjchiraka choornam (Internal) for the management of peenisam (sinusitis) is taken up for Post Graduation Dissertation Studies by Dr.D.Leelambigai (Reg No.321311005) PG Dept, of PothuMaruthuvam are correctly identified and authenticated through Visual inspection / Organoleptic Characters / Experience, Education & Training Morphology Microscopical and Taxonomical methods.

S.N	Name	Botanical Name	Family	Parts used	Quantity
1.	Perunjchirakam	*pimpinella anisum*	*Apiaceae*	fruit	250gms

Station: Palayamkottai

Date:

14/1/16

Authorized Signature

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CONTENTS

INTRODUCTION

The siddha system of medicine is regaining its lost glory throughout the world today. The world Health organization (WHO) defines health a "State of complete physical, mental and social well being and not merely the absence of disease". This doctrine was already proclaimed even before the prehistoric period by the unique system of siddha medicine.

Thus this is the first system to emphasize health as a perfect state of physical, psychological, social and spiritual component of a humen being. This explanation is quoted in "Thirumanthiram" which is a pioneer worked by Thirumoolar as follows

மறுப்பதுடல் நோய் மருந்தென லாகும்
மறப்பதுள நோய் மருந்தெனச் சாலும்
மறுப்ப தினிநோய் வாராதிருக்க
மறுப்பது சாவை மருந்தெனலாமே

- **திருமந்திரம்**

One that cures physical ailment is medicine

One that cures psychological ailment is medicine

One that prevents ailment is medicine

One that bestows immortality is medicine

Agathiyar classified the disease into 4448 types. The disease of nasal origin is classified into 86 types and one among them is 'peenisam' and 'KABHA PEENISAM' is one of the classifications in peenisanoi.

The signs and symptoms of KABHA PEENISAM are mentioned as headache, excessive lacrimation, nasal congestion, rhinorrhoea, cough with expectoration can be similarly correlated as modern medicine is 'sinusitis'.

Sinusitis affects a tremendous proportion of the populaiton, accounts for millions of visits to primary care physician each year.

According to National ambulatory medical care survey (NAMCS) data, sinusitis is the fifth leading disease.

The prevalence of sinusitis estimated to be 14% of the global population and it is higher in women compared to men (57% Vs 3.4%). Approximately 0.5% to 2% of adults and 6% to 13% of children are complicated by bacterial sinusitis.

So I chose PERUNJCHIRAKA CHOORANAM inscribed in the text of gunapadam mooligai vaguppu, part I for the treatment of "KABHA PEENISAM".

The trial drugs has been chosen for the clinical study because of the easy availability of the ingredients and of the convenience in the preparation of medicine.

AIM AND OBJECTIVES

Aim

The recent pervasiveness rate of "Sinusitis" in our country is very high due to environment factor. Now-a-days, it builds up as a major health concern and need of great focus on its efficacious treatment with better quality of life style. Perhaps the available studies are insufficient in siddha system compared with modern trend settings, impresses the author to work a telescopic sight on this topic.

To study the efficacy of the trail drug PERUNJCHIRAKA CHOORANAM (internal) in the treatment of KABHA PEENISAM (Sinusitis).

Objectives

Primary objective

To evaluate the clinical eficacy of the drug Perunjchiraka chooranam (internal) in the treatment of Kabha peenisam (sinusitis).

Secondary objective

- To explore the exact definition, etiology, clinical features, diagnosis, prognosis and investigations for kabha peenisam in siddha literatures and correlation with modern science.
- To survey the incidence of the disease, according to age, occupation, socio economic status, habits, paruva kaalangal and thinai.
- To divulge how the mukkutram and seven udarkattugal are deranged in this disease.
- To document changes in the envagai thervugal of the disease.
- To perceive the adverse effects of the trail drug.
- To evaluate the biochemical, pharmacological, acute toxicity and microbiological studies of the trial drug.

ABSTRACT

As estimated 134 million Indians suffer from sinusitis both acute and chronic. On an average about one in eight Indians suffer from sinusitis. The incidence in the increase of infectious diseases in recent times is due to changes in environment, exposure to pollution factors, abnormal dietary habits and life style.

Twenty patients of both sexes were selected as In-patients and another twenty patients as Out-patients in PG Pothu Maruthuvam department, Government Siddha Medical College and hospital, Palayamkottai. The selected patients were administered with the trial medicine till the period of study.

PERUNJCHIRAKA CHOORANAM – 2gm was given twice a day, after meal.

The trial medicine was subjected to Biochemical, pharmacological, anti microbial and acute toxicity study.

At end of this trial study, majority of cases showed good results.

SIDDHA ASPECT

Siddars classified the diseases into 4448 types. Among them the diseases of nasal origin are 86, one such disease is peenisam and KABHAPEENISAM is one among 9 types of peenisa noi.

The specific signs and symptoms of the topic kapha Peenisam other information regarding definition, aetiology, general signs and symptoms, pathology and naadi nadai of Peenisam have been dealt with, since they are common for all types of Peenisam.

SYNONYMS:

- மூக்கடைப்பு
- நீர்க்கோவை
- மூக்கு நீர்பாய்தல்

DEFINITION

SIDDHA MARUTHUVAM

மூக்கின் துளைக்குள் சிவந்து, தும்மல், கண் சிவந்து நீர்வடிதல், தலைநோய், அடிக்கடி மூக்கை சிந்தி சளி, சீழ், குருதி வெளியாதல் ஆகிய இயல்புடைய நோயாகும்.

AETIOLOGY

1. SIDDHA MARUTHUVAM, ARUVAI MARUTHUVAM, NOI NADAL NOI MUDHAL NADAL Part (2):

In the above literatures, the etiology of peenisam is as follows,

- மிகுந்த குளிர்ந்த நீரை பருகல் (Cold water drinking)
- பனி (அ) குளிர்ந்த காற்றிலீடுபடல் (Cold air exposure)

- புகை (அ) புழுதி படிந்துள்ள காற்றை சுவாசித்தல் (Air pollution)
- எதிர் காற்றில் செல்லல்
- தும்மலையுண்டு பண்ணும் பொருள்களை முகர்தல் (Allergens)
- உடல் வெப்பமடைந்திருக்கும் போது ஐயத்தை பெருக்க கூடிய குளிர்ந்த நீரை தலைமுழுகல்
- குளிர்ச்சியான பொருள்களை உட்கொள்ளல்
- கண்ணீர், வாந்தி தடுத்தல்
- அதிகம் உரத்து பேசல் (Loud speech)
- அளவுக்கு மிகுந்து, குறைந்து நித்திரை கொள்ளல் (Distrubed sleep)
- மேக நோய்க்கு துணையாகவும் வரும். (Syphlis)

2. AGASTHIYAR KANMA KAANDAM 300:

பகருவேன் மண்டையில் கரப்பான் கட்டும்
பகரரிய பீனிசங்க ளிரணத் தோடு
நிகரில்லா வொரு தலைநோய் மண்டைக்குத்தும்
நிசமாக வந்தகன்மம் நிசமாய்க் கேளு
தகரவே காயடித்த லிலை பறித்தல்
தளிர்கொழுந்து தழைமுறித்தல் பட்டைவெட்டல்
நிகரில்லா பூப்பறித்தல் வேர்கொடிகள் வெட்டல்
நினைவுகெட்டு சிவசெந்து தனையடித்தலாமே

According to Agasthiyar kanmakandam 300, Peenisam is considered to be a kanma disease. The activities like plucking leaves, fruits, young shoots, flowers, cutting barks, roots, twigs and hurting animals will cause Peenisam.

3. SIDDHA MARUTHUVANGA CHURUKKAM

"விழியினில் நீரடக்கில் விதமானயிருந்து ரோகம்

வழிபடு பீனிசங்கள் வந்திடும் நேத்ர ரோகம்

அழுகிடும் சிரசில் ரோகம்"

Due to the control of lacrimation it will causes peenisam, disease of eye and head.

4. JEEVA RATCHAMIRTHAM (NASIGA ROGA PETHAM)

The literature describes the below etiological features.

- Exposure to cold air
- Nasal blockage by dust
- Loud speech
- Excess sleep or sleeplessness
- Taking bath in cold water daily
- Controlling the urge, tears and vomiting
- Sleeping in uneven bed
- Excessive sexual indulgence

All these activities vitiate Vadham, Pitham and kabham which affects the nose and cause Peenisam.

5.PATHINENN SIDDHAR NAADI SASTHIRAM AND GURU NAADI

பிநீசந்தான் வரலாறு சொல்லக் கேண்மின்

சேதமுடன் கனலெழும்பு வாய்வு சேர்த்து

ஊறுருதி மண்டையிலே தொகுக்கப்பட்டு

உறுதியுடன் வாயுகங்கே யுறுத்துபின்னும்

ஈனமுடன் னோடும் நீர்சீ ழிரத்தம்

பிடித்து கருங்காது மூக்கினோடு

தேனருவி வந்தனு போல் செங்கண் சீருயுர்

சேர்ந்து வீழும் பீனிசத்தின் செய்கையாமே.

The heat and vayu combine together and affect the head, thereby causing Peenisam.

6. T.V. SAMBASIVAM PILLAI MARUTHUVA AGARATHI

- Mucus discharge through the nostrils is due to an inflammation in the head or cold affecting the nose.
- Excessive indulgence in sexual intercourse
- Body heat is transmitted to head
- Entry of minute particles of dust or smoke into the nostrils
- Excessive application of heat or cold
- Voluntary retention of stools and urine
- Diseases of the nose.

நோயின் முற்குறிகள்

சித்த மருத்துவம், நோய் நாடல் நோய் முதல் நாடல் பகுதி II.

1. மூக்கில் ஒரு வகை எரிச்சல், நமைச்சல் தாங்க முடியாது, மூக்கு முனையை அடிக்கடி தேய்த்து சிவக்கச் செய்தல்.
2. கண்கள் சிவந்து கண்ணீர் வடிதல்
3. மூக்கடைத்தாற்போல் பேசுதல்.
4. காதடைத்தல், காதில் நமைச்சல்.

5. தலை நோய்

6. மூச்சு உள் வாங்க வெளிவிட சிரமம்

7. மூக்கில் இருந்து பனிநீர் போல் வடிதல்.

CLINICAL FEATURES

1. According to Yugi vaithiya kaviyam

சத்தே யிருமல் தும்மல் சலமாய் மூக்கில்நீர்பாயும்

முத்தேபிடரி முடியுப்பு மொருக்கலண்டி பிரண்டிருக்கும்

மற்ற வியாதி இடங்கொடுக்கும் மாகில் கோழை மரித்துவிழும்

நித்தம் நோய்கள் நிறைந்திருக்கும் பீநீசமு மெனலாமே

Cough, expectoration, sneezing, running nose, pain in the occipital region, which persists throughout the days.

2. According to Athma Ratchamirtham

சிரசில் கனலெழுந்து சூலையில் ரோகம்

அதிகரித்து சீழ்போலும் சிராய் போலும்

காணப்படும் ஒரு வித மூக்கு நோய்

Increased heat (pitham) affects head causing pain and purulent discharge from the Nose.

3. NAGAMUNIVAR THALAI NOI MARUTHUVAM AND SIDDHAR ARUVAI MARUTHUVAM

தலைமிக வலிக்கும் நாசி சளிவிழுமொரு வுண்டாகும்

நலிவுரு தும்மலுண்டான் நாட்செவியில் வரளும்நாசி

மலைவுறத் திரண்டு விழும் வாயுமே நாளைமுண்டால்

பெலமுற மூக்கடைக்கும் பீனீச மென்று தேரே;

தலையுங் கனத்து வலிகொண்டு சளிபோனா சாற்றிரண்டு விழும்

அலையு மொருப்போ லொருகாலு மறுதிப் படவே மாறாது

குலையுற் கெடாது பரிகார நியதிப்படவே செய்துவரில்

தொலையுஞ் சொன்னோம் பீனீசமும்:

- Severe head ache
- Rhinitis
- Sneezing
- Dryness of nose
- Halitosis
- Severe nasal block
- Head ache
- Expectoration

4. AGASTHIYAR 2000

கண்ட முகங்கா துங்கரங் தூர்வது போலத்

துண்டமுந் தினவும் பத்தி தும்மியே தண்ணீர் வீழ்ந்து

மண்டையுங் கனத்து நொந்து வாதமும் பகைக்குமாகில்

முண்டகமதிக்கு மாதே மூக்குநீர் பாய்ச்சல் போம்

- Throat, ear and facial irritation
- Itching in the nose
- Sneezing
- Running nose
- Heaviness of Head
- Head ache

5. NOI NAADAL NOI MUDHAL NAADAL PART 2

- Itching and irritation in the nose results in rubbing the tip of the nose which becomes markedly red, tense, tender.
- Redness and lacrimation of the eyes.
- Nasal obstruction
- Itching and blockage of ears
- Difficulty in breathing
- Profuse watery discharge from the nose
- Head ache

6. ATHAMA RATCHAMIRTHA SARA SANGIRAGAM

- Watery discharge from the nose
- Itching in the occipital region and face due to exposure to cold air.
- Irritation in the nose.
- Frequent sneezing
- Heaviness of the head and headache.

7. T.V.SAMBASIVAM PILLAI MARUTHUVA AGARATHI

- Watery discharge from the nose
- Sneezing in the rainy season.
- Itching in the occipital region and face.

CLASSIFICATION OF PEENISAM

According to SIDDHA MARUTHUVAM and NOI NADAL NOI MUDHAL NADAL – PART I Peenisam is 9 types.

1. Vali peenisam
2. Azhal peenisam
3. **Kabha peenisam**
4. Neer peenisam
5. Kuruthi peenisam
6. Seezh peenisam
7. Sirai peenisam
8. Mulai peenisam
9. Kazhuthu peenisam

According to THANVANTHIRI VAITHIYAM Peenisam is of 10 types

1. Vatha peenisam
2. Pitha peenisam
3. **Kabha peenisam**
4. Vatha pitha peenisam
5. Vatha kaba peenisam
6. Pitha kaba peenisam
7. Mukkutra peenisam
8. Sala peenisam
9. Ratha peenisam
10. Varatchi peenisam

According to ATHMA RATCHAMIRTHA SARA SANGIRAGAM peenisam is 8 types

"காப்பான வாத பீனிசந்தானாகும்

கருதிய தோர் பித்த பீனிசமுமாகும்

வாப்பான சிலேத்ம பீனிசமுமாகும்

வருத்த நீர்ப்பீனிசமாம் சீப்பீனிசம்

சேப்பான வுதிர பீனிசமுமாகும்

செழிப்பான சிறாப் பீனிச மூல பீனிசமாம்

ஆப்பான கண் பீனிச தானாகும்

அப்பனே யெட்டு வித தின்ணமாமே"

1.Vatha peenisam

2. Pitha peenisam

3. Silethma peenisam

4. Neer peenisam

5. Ratha peenisam

6. Seezh peenisam

7. Sirai peenisam

8. Mulai peenisam

According to T.V. SAMBASIVAM PILLAI MARUTHUVA AGARATHI peenisam is 7 types

1.Vatha peenisam

2. Pitha peenisam

3. **Silethma peenisam**

4. Seezh peenisam

5. Sirai peenisam

6. Neer peenisam

7. Ratha peenisam

According to Jeeva ratchamirtham peenisam is 18 types.

1. Vatha peenisa rogam
2. Pitha peenisa rogam
3. **Silethma peenisa rogam**
4. Trithosa peenisa rogam
5. Ratha peenisa rogam
6. Thusta peenisa rogam
7. Athi thumal peenisa rogam
8. Nasika sosa rogam
9. Nasikanasa rogam
10. Kirana barga rogam
11. Nasika sirava rogam
12. Abinisa rogam
13. Nasika thibigai rogam
14. Poothi nasika rogam
15. Pooya siranasika rogam
16. Nasika poodaga rogam
17. Nasa rasa rogam
18. Nasika bootha rogam.

MUKKUTRA VERUPADUGAL

- Due to food habits and deranged pitham i.e; pitham raised from its nature, which raises the body heat (Pitham) which inturn increases both vatham and kabam.
- While doing yoga, the vitiated pitham (body heat) along with udhana vayu reaches the head where it combines with kabam causes peenisam.

NAADI NADAI IN PEENISAM

1) "விரணமுடன் புண்புரைக்கு வாதபித்தம்

விதியற்யா ***பீனிசந்தான்*** *பித்த சேத்துமம்*

- பரிபூரண நாடி

2) பித்தத்தில் சேத்தும் நாடி

பண்பான பித்தத்தில் சேத்தும நாடி

பரிசித்தா லத்திசுர ***மிளைப்புசளை***

கண்காது நயனமலம் நீருமஞ்சள்

கனவயிறு பொருமல் மஞ்சள்நோய் கண்நோவு

உண்போது மறுத்தல் இரத்த விப்புருதி தானும்

உளைமாந்த ***பீனிசமும்*** *இரத்த வீக்கம்*

நண்பான காமாலை சோகைவெப்பு

நணுகிவந்த பலபிணியும் நண்ணுந்தானே

- சதகநாடி

2. சேத்துமத்தில் வாதநாடி

கண்டாயோ சிலேற்பனத்தில் வாதநாடி

கலந்திடுகில் வயிறு பொறுமல் கனத்த வீக்கம்

உண்டாலோ ஓங்காரஞ் சத்தி விக்கல்

உறுதிரட்சை வாய்வுவலி சந்தி தோடம்

விண்டாலே ***இளைப்பிருமல்*** *சோபை பாண்டு*

விடபாகம் விடசூலை பக்கவாதம்

திண்டாடு ***நாசிகா பீடம்*** *கக்கல்*

சிரநோய்கள் *பலவும் வந்து சிக்குந் தானே.*

- சதக நாடி

PINIYARI MURAIMAI (Method of diagnosing the disease)

The method of diagnosis in siddha system is based on

- Poriyalarithal
- Pulanal arithal
- Vinathal

Porigal are considered as the five sense organs of perception namely

Mei	-	Skin
Vai	-	Tongue
Kan	-	Eye
Mooku	-	Nose
Sevi	-	Ear

In Kabha peenisam, mei is not affected. The affected other Gnanenthiriyam produces, redness and lacrimation from kan, Running nose from mukku and otalgia in sevi.

Pulangal are five senses namely touch, smell, sound, taste and sight sensation. Physicians use their pori and pulan to examine the pori and pulan of the patient respectively to diagnosis the disease.

Ooru	–	Touch
Osai	–	sound
Suvai	–	Taste
Oli	–	vision
Natram	–	smell

In kabha peenisam, ooru is not affected, but there is diminished sensation of sound, taste and smell.

Vinathal is obtaining the information regarding the history of the diseases, the clinical features etc., from the patient or from immediate relatives who are taking care of him, when the patient is not in a position to speak or if the patient is a child.

The above principle correspond to the methodology of inspection, palpation and interrogation methods of modern science in arriving at a clinical diagnosis of the disease.

Siddha system of medicine has developed a unique method of diagnosing the disease is called “Envagai thervugal.”

ENVAGAI THERVUGAL

The unique diagnostic principle in Siddha system of Medicine is Envagai Thervugal. Siddhars describe in many of their literatures that envagai thervugal is an instrument for a Siddha physician to examine and diagnose a patient. The following paremeters are adopted to diagnose a patient.

- Naadi(Pulse)
- Sparisam (Palpation)
- Naa(Tongue)
- Niram (Colour)
- Mozhi (Speech)
- Vizhi (Eyes)
- Malam (Faeces)
- Moothiram (Urine)

This has been explained as follows

"நாடி ஸ்பரிசம் நா நிறம் மொழி விழி

மலம் மூத்திரமிவை மருந்து வராயுதம்"

"மெய்க்குறி நிறந்தொனி விழிநாவிநலமலம் கைக்குறி"

- தேரையர்

According to Agasthiyar Mani 4000,

"அகத்துறு நோயைக் கரத்தாம லகம் போல்

பகுத்தறிவிர் நாடிப்பரிசம் தொகுத்த நிறம்

கட்டு வகைச் சொல் மொழிகண் கண்டமல மூத்திரம்நா

எட்டுவகை யாலுமறி வீர் (6)

- அகத்தியர் மணி 4000

1. NAADI

Among envagai thervugal the chief parameters for diagnosis is pulse reading. The siddha physician's fingers resemble a bimanual stethoscope.

Pulse can be felt at one inch below the wrist on the radial artery by palpating it with physician's tip of index, middle and ring fingers corresponding vatham, pitham and kabam respectively.

The normal ratio (1: ½ : ¼) of vatha, Pitha and kaba is altered in various diseases. In Kabha peenisam, the following pulse may be seen,

Pitha Vadha Naadi, Pitha Kaba Naadi, Kaba vadha Naadi

PITHA VADHA NAADI

"சிறப்பான பித்தத்தில் வாதநாடி
சேரிலுறு தாது நட்டமுதர பீடை
உறைப்பாகச் செரியாமைக்குன் மஞ்சூலை
யுற்ற சுரங்கிராணி வயிற்றிரைச்சல் மந்தம்
அறைப்பான ஓங்கார "புறநீர்க்கோவை"
ஆயாசமிரக்க மொடு மயக்க மூர்ச்சை
முறைக்காய்வு விஷ வீக்கம் மூலவாய்வு
முரடான நோய்பலவு முடுகும் பண்பே."

- சதக நாடி

PITHA KABA NAADI

"பண்பான பித்தத்தல் சேத்தும நாடி
பரிசித்தாலத்திசுரமிளைப்பு ஈளை
கண் காது நயன மலம் நீ ருமஞ்சள்
கனவயிறு பொருமல் மஞ்சள் நோய் கண்ணோவு
உண் போது மறுத்தல் ரத்த விப்புருதி தானும்,
உளைமாந்தை 'பீனசமும்' ரத்த வீக்கம்
நண்பான காமாலை சோகை வெப்பு
நணுகி வந்த பல பிணியும் நண்ணுத்தானே".

- சதகநாடி

KABA VATHA NAADI

"கண்டாயோ சிலேற்பனத்தில் வாதநாடி

கலந்திடுகில் வயிறு பொருமல் கனத்த வீக்கம்

உண்டாலோ ஓங்கார சத்தி விக்கல்

உறுதிரட்சை வாய்வு வலி சன்னிதோடம்

விண்டாலே இளைப்பிருமல் சோகை பாண்டு

விடபாகம் விடசூலை பக்கவாதம்

திண்டாடு நாசிகா பீடங்கக்கல்

சிரநோய்கள் பலவும் வந்து சிக்குந்தானே".

- சதகநாடி

SPARISAM

By touching the skin and various parts of the body, the physician can rule out various abnormalities.

In Kabha peenisam the inate warmth of the body is increased.

In Kabha peenisam, the tenderness present in frontal and maxillary region is elicited.

NAA

Colour, coating, dehydration, ulcer, fissure, deviation, movements, variations in taste and the conditions of gum and teeth can be noted by examining the tongue.

In Kabha peenisam, excessive salivation and tasteless of tongue is present.

NIRAM

Pallor, cyanosis, yellowish and other discolouration of the skin should be noted. The type of the body is confirmed by the skin colour whether in black (vadha), red (or) yellow (pitha), white (kaba) and mixed colours (mixed humours)

Yugi explains as follows,

"தேகத்தி னிறந்தானுந் செப்பக் கேளீர்
சிறுமையாய் வாதந்தான் கறுத்தி ருக்கும்
போகத்தின் பித்தநிற மஞ்ச ளாகும்
பொருஞ் சேட்ப ரோகிக்கு வெளுப்பு மாகும்
பாகத்தின் தொந்தரோ கிக்கு தானும்
பலபலவண் ணமுமாகிப் படிந்து நிற்கும்"

- யூகி வைத்திய சிந்தாமணி

In Kabha peenisam, the skin colour depends upon the patient's body condition.

MOZHI

In examination of speech, the high (or) low pitched voice, slurred speech, aphasia, Dysarthria, nasal speech, hoarseness of voice can be noted.

In Kabha peenisam, speech may be low pitched due to nasal congestion. According to Agasthiyar Mani 4000,

"பலரோகி வார்த்தைப் பலவிதமாம் வாதத்
தலைரோகி வார்த்தைச் சமமாகும் - நிலைகடந்த
பித்தரோ கிக்கு உயர்ந்த பேச்சுண்டாம் சிலேட்டுமந்தான்
சத்தம்ஈ னச்சுரமாம் தான்".

- அகத்தியர் மணி 4000.

Agasthiyar says – The high pitched voice in pitha, low pitched voice in kabha and loud voice in vadha patients.

VIZHI

Discolouration of eyes, sunking, swelling, lacrimation, ulceration, falling of eye lids, swelling and ulceration, falling of eye lashes, vision, condition of cornea, conjunctiva and pupils can be examined. Both motor and sensory disturbances of eyes are noted.

According to **Yugi vaithiya chinthamani,**

"விரித்திட்ட வாதமென்ற ரோகிக் குத்தான்
மீறியே கண்கறுத்துத் தண்ணீர் பாயும்
பரித்திட்ட பயித்திய ரோ கிக்குக் கான்
பச்சென்று சிவந்திருக்குஞ் சேட்ப ரோகி
பிரித்திட்ட பீளைசாரும் வெளுத்தி ருக்கும்
பெருஞ்சன்னி வாதரோ கிக்குங் கண்தான்
கரித்திட்டுச் சிவந்துபச் சென்றி ருக்கும்
காமாலை ரோகிக்கு பசுமஞ்ச ளாமே"

Above verse states that eyes are in black colour with tears in vadha, red colour in pitha, white colour in kabha patients. In delirium, mixed colours and in jaundice yellow colour are present.

In Kabha peenisam, eyes are reddish in colour and lacrimation of eyes may be present.

MALAM

Quantity, odour, constipation, diarrhoea, presence of blood, mucus, pus, undigested matter, tenesmus etc., can be noted.

In kabha peenisam, the faces is normal in colour.

MOOTHIRAM

Neerkuri

The urine analysis is done in siddha system according to five parameters.

"வந்தநீர்க் கரியெடை மணம்நுரை எஞ்சலென்

றைந்திய லுளவவை யறைகுது முறையே"

- தேரையர் நீர்க்குறி நெய்க்குறிநூல்

Niram - It indicates the colours of urine

Manam - It indicates the smell of urine

Edai - It indicates specific gravity of urine

Nurai - It indicates froth of urine

Enjal - It indicates quantity of urine

In addition frequency, urgency, hesitancy of micturation, painful burning urination, any sedimentation and any associated discharge can be analysed.

NORMAL URINE

"மிகத் தடிப் பும்மிகத் தேறலும் இன்றெனில்

சுகத்தைத் தரும் மெய்ச் சுபாவநீர் நன்றே"

- தேரையர் நீர்க்குறி நெய்க்குறிநூல்

The normal urine should be in medium weight and moderate clearance.

NIRAM

According to **yugi vaithiya chinthamani**

"பண்பான வாதரோ கிக்கு மூத்ரம்

பாரித்துத் தெளிந்திருக்கும் வெண்மையாகும்

பண்பான பித்த ரோ கிக்கு மூத்ரம்

மார்க்கமாய் மஞ்சளித்துப் பசத்தி ருக்கும்

- யூகி வைத்திய சிந்தாமணி

Yugi described that vadha urine is clear, white in colour, pitha urine is yellow in nature.

The Kabha peenisam, the humours Pitha and kabham are chiefly aggravated and the colour of urine resembles Pitha urine or kabha urine.

The same has been quoted as follows,

"மூத்திரக் குறிகள் கேளாய் மொழிந்திடும் வாதம் வெண்மை

காத்திர மூத்த பித்தஞ சிவப்பொடு சிறுகும் நீரும்".

- அகத்தியர் 2000.

MANAM

It indicates the smell of urine such as pleasant, foul smelling, honey smell, fruity smell and flex smell etc.,

"புலால் மணங் கமழிற் பூதிய பசைக்கே

டலாதிலை யந்நிரக் குணமின் றெனில்

அடையுந்ததி யென்றதையத் தான்மிகக்

கெடுதி யெனவுங் கிளக்குந் சுருதியே

EDAI

It indicates the specific gravity of urine

"அற்பமும் கனமற் றதிதெனி வுறுமெனின்

வற்புறு சீதளம் மன்னிக் கனத்துக்

கபத்தை இளக்கலால் கண்ட நீர் இ.ஃதே"

- தேரையர் நீர்க்குறி நெய்க்குறி நூல்.

Above verse explains that high specific gravity indicates the affected vadham, pitham and kabam.

NURAI :

It indicates thr froth in urine.

ENJAL

It indicates the inorganic and organic deposits like salts, crystals etc.,

"ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணமுரைக்கிற்

பூங்கொடி கடுத்து நொந்து சிறுத்துடன் பொருமிவிழும்

பாங்குடன் பித்தத் தோர்க்குப் பொசியநீர் சிவந்துகாட்டி

யேங்கவே சுறுக்கதாக யெரித்துடன் கடுத்து விழும்"

- தன்வந்திரி வைத்தியம்

Neikuri

"அருந்துமா றிரதமும் அவிரோ தமதாய்

அ.ஃகல் அலர்தல் அகாலவூண் தவிர்ந்தழந்

குற்றள வருந்தி உறங்கி வைகறை

ஆடிக் கலசத் தாவியே தாது பெய்

தொரு முகூர்த் தக்கலைக் குட்படு நீரின்

நிறக்குறி நெய்குறி நிருமித்தல் கடனே"

- தேரையர் நீர்க்குறி நெய்க்குறி நூல்.

A drop of gingelly oil is dropped into wide vessel containing the urine, to be tested and keep it under the sunlight. The variations of three humours in disease can be diagnosed by the behaviour of gingelly oil on the surface of urine.

"அரவென நீண்டிடின் அ.ஃதே வாதம்"

The drop of oil lengthening like a snake indicates vadham.

"ஆழி போற் பரவின் அ.ஃதே பித்தம்"

If the drop of oil spreads like a ring it indicates pitham.

"முத்தொத்து நிற்கின் மொழிவதன் கபமே"

The drop of oil remains floating as a pearl indicates kabam.

In thontha state, the oil spreads in mixed form.

By careful examination of the urine with gingelly oil, the physicians can know whether the disease is curable or not. For this purpose, siddhars have explained various spreading natures of oil on urine surfaces.

MUKKUTRANGAL

According to **Yugi Vaithiya Chinthamani,**

"நடிக்கின்ற வாதபித்த சேட்ப மூன்று
நலமா விதின்பிரின புட்டக் கேளாய்
வடிக்கின்ற வாதமது வாயுநிலை கலங்கி
மத்தியமா மக்கினிய மார்க்க மாமே
மாக்கமாம் பித்தந்தா னக்கி னியை
மசக்கி வைத்து மாய்கையுடன் வருந்தி வைக்கும்
தூக்கந்தான் சேட்பமது சலமிகு யாக்கித்
துவாரங்க போறுமிடை விடாமனிற்கும்."

- யூகி வைத்திய சிந்தாமணி

Vatha, pitha and kaba are the three life principles. They have multiple significance in a body.

VADHAM

Vadham represents vayu, mind, dryness, pain, flatulence, sensitiveness, lightness and also air. Vadha is classified into ten forms. Vadha comprises the function of motor and sensory nervous system. The changes of vadha in kabha peenisam are,

Pranan	Affected
Abanan	Not affected
Viyanan	Affected
Udhanan	Affected
Samanan	Affected
Nagan	Not affected
Koorman	Affected
Kirukaran	Affected
Devathathan	Not affected
Dhananjeyan	-

Affected Pranan produces nasal congestion and difficulty in breathing.

Affected Viyanan produces head ache, heaviness of the head, pain (or) tenderness over the maxillary region.

Affected Udhanan produces cough with expectoration.

Affected Samanan produces loss of appetite.

Affected Koorman produces watering of the eyes.

Affected Kirukaran produces sneezing, profuse watery nasal discharge.

PITHAM

Pitham represents gastric juice, bile, energy, heat, inflammation, anger and irritation. Pitha signifies the function of thermogenesis, metabolism, digestion, formation of various secretions and excretions and also gives colour to skin and blood. Five types of pitha and their findings in Kabha peenisam are,

Analapitham	Affected
Ranjagam	Affected
Alosagam	Not affected
Prasagam	Not affected
Sathagam	Affected

Analapitham in Kabha peenisam is affected which produces loss of appetite.

Ranjaga pitham may or may not be affected according to the patient's haemolglobin level.

Sathagam is affected and there by produces difficulty in performing usual works.

KABHAM

Kabham represents feelings of cold, heaviness, mucous discharge and saliva. Five forms of kabam and their findings in Kabha peenisam are,

Avalambagam	Affected
Kilethagam	Not affected
Pothagam	Not affected
Tharpagam	Affected
Santhigam	Not affected

Affected Avalambagam produces cough with expectoration.

Affected Tharpagam produces irritation and watering of the eyes.

UDARKATTUGAL

They are the basic body structures, which constitute the entire body. They are seven in numbers. Affected body structures in Kabha peenisam are

Saram	Affected
Senneer	Affected
Oon	Not affected
Kozhuppu	Not affected
Enbu	Not affected
Moolai	Not affected
Sukkilam / Suronitham	Not affected

Affected Saram produces tiredness of body.

Affected Senneer produces eosinophilia and raised ESR.

Oon and Kozhuppu may or may not be affected according to the patient's nutrition and general body condition.

LINE OF TREATMENT

In siddha system, the main aim of the treatment is to resolve udarpini and manapini (due to alteration in mukkunam).

Treatment is not only aimed to cure the disease, but also for the prevention of the disease and improving the immunity to overcome the seasonal changes and other risk features of kapha peenisam.

This is said as follows:

- Kaappu (Prevention)
- Neekkam (Treatment)

The three humours which are responsible for organization, regulation and integration of the bodily structures and their physiological functions are always kept in a stage of equilibrium by word thought, deed and food of the individual. The general aetiological factors for constitutional discomfort said to be caused by incompatible diet, mental and physical activities.

So it is essential to know the disease and the cause for the onset of disease, the nature of the patient, the severity of illness, the seasons and time of the ocurrence of the disease must be observed.

The line of treatment consist of

- Drug for the disease
- Dietary regimen

In the case of kapha peenisam the medicines should be given to the vitiated kabam and pitham.

DIET AND RESTRICTIONS

“பத்தியங் கோழி முட்டை பசும்பால்
முத்தநெய் முருங்கையிலை
மற்றும் நிகரில் கத்திரிக் கூட்டும்
பத்துமே துவரை தானும் பண்பான பீனிசம் போமே”

- குணபாடம் பாடல் எண் 343

Egg, milk, castor oil, moringa leaf, brinjal can be taken in peenisanoi.

Diets should be taken

- Pepper
- Karisalai
- Thoothuvelai
- Manathakkali
- Murugaikai
- Karunai
- Neelikai

Diet should be avoided

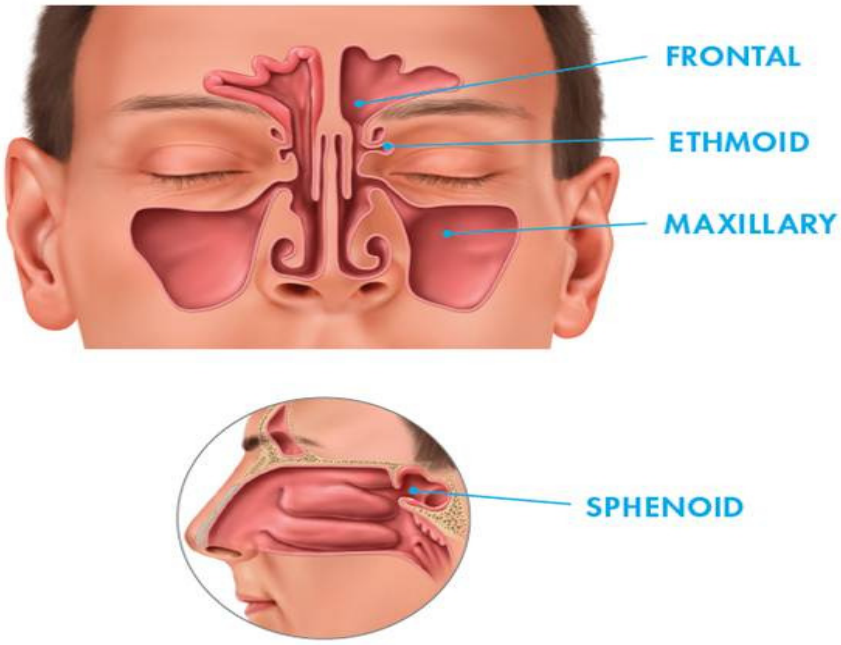
- Buttermilk
- Ice cream
- Lemon juice
- Cool soft drinks
- Bottleguard
- Pumpkin

Advices to be followed

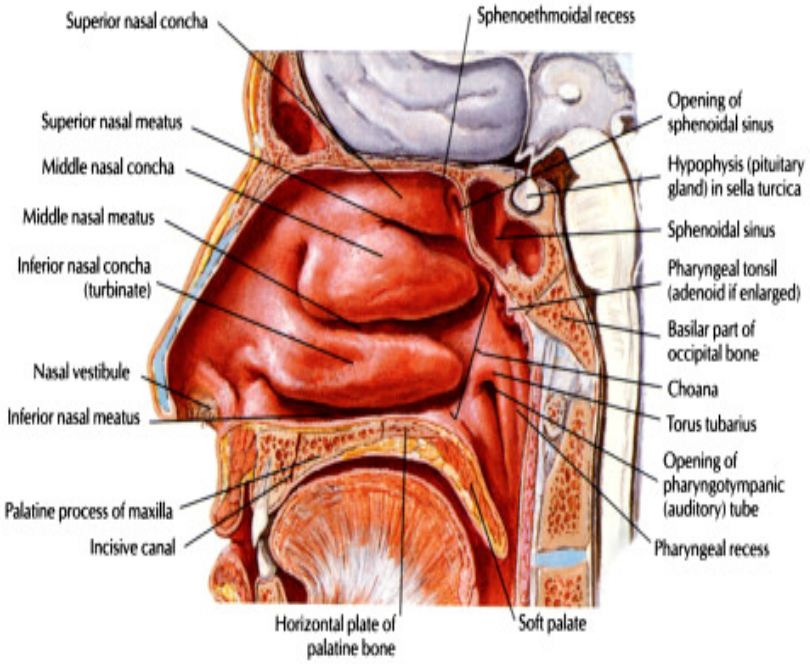
- Avoid polluted places and cold environment.
- Use hot water for drinking and sanitary purpose.
- Avoid sleeping during day time on the day of oil bath.

MODERN ASPECT

ANATOMY AND PHYSIOLOGY OF PARANASAL SINUSES



LATERAL VIEW



SINUSES GROSS ANATOMY

The Latin word Sinuses means Curve, Hollow or Fold

1. Cavity within a bone
2. Canal or passage leading to an abscess
3. Any cavity having relatively a narrow opening

PARANASAL SINUSES (PNS) are air filled spaces in the bone of the facial skeleton Nasal mucous membrane as well as lining of nasal sinus are lined by respiratory epithelium (pseudostratified columnar ciliated cells). Mucous and serous glands underlie the mucous membrane. All of them open into the nasal cavity through its lateral wall .

Paranasal sinuses (PNS) are divided into 2 groups

1. Anterior group

- Frontal air sinus
- Maxillary air sinus
- Anterior ethmoidal air sinuses

Anterior group drains into the middle meatus

2. Posterior group

- Posterior ethmoidal
- Sphenoidal sinus

Posterior group drains into the superior meatus and spheno-ethmoidal recess.

The nasal turbinates

There are three nasal turbinates the superior, middle and inferior and rarely , a fourth the supreme.

The functions of the turbinate are

1. Regulate the intranasal pressure
2. Provide humidification
3. Facilitate mucus secretion
4. Provide olfaction
5. Absorbs shocks
6. Deminishes the skull weight
7. Resonance the voice.

DEVELOPMENT OF PNS

- Maxillary and ethmoid sinuses are present at birth while the sphenoidal sinus is rudimentary at birth and is recognizable at 8 years of age.
- The frontal and spenoidal sinuses start their growth after 3 years.
- Maxillary and ethmoidal sinuses are fully developed at the age of 12.
- Frontal sinuses are fully developed at the age of 18-20

ANTERIOR GROUP OF PARANASAL SINUSES (PNS)

1. FRONTAL SINUSES

Frontal sinuses are two in numbers and are of unequal size divided by a bony septum which is seldom in midline.

SITUATION

It lies in the frontal bone deep to the superciliary arch. It extends above the medial end of the eyebrow and backwards in the medial part of roof of the orbit. It opens into the middle meatus of nose at the anterior end of hiatus semilunaris either through ethmoidal infundibulum or through fronto-nasal duct.

Blood and nerve supply

It is supplied by supra orbital artery, supra orbital vein and supra orbital nerve.

Lymphatic Drainage – to the submandibular nodes.

2. MAXILLARY SINUS

Maxillary sinus is the largest of all paranasal sinuses and is the first PNS to develop. It is also called antrum of Highmore.

SITUATION

Maxillary sinus lies in the body of the maxilla.

It is pyramidal in shape, its apex directed laterally into the zygomatic process of the maxilla and base forming the lateral wall of nose.

Arterial supply is by branches of maxillary, facial and greater palatine arteries.

Venous drainage is by anterior facial vein and pterygoid venous plexus.

Nerve supply

Maxillary nerve through supra-alveolar, anterior palatine and infra orbital nerves. Secreto motor fibres relay through pterygopalatine ganglion.

3. ETHMOIDAL SINUS

There are 8- 18 inter communicating spaces which are present from birth.

SITUATION

It lies within the lateral part of ethmoid bone situated between the nasal cavity and the orbit giving it a honey comb appearance called the ethmoidal labyrinth. Each sinus is pyramidal in shape. They are completed from above by orbital plate of frontal bone, from behind by the sphenoidal conchae and the orbital process of the palatine bone and anteriorly by the lacrimal bone.

These are divided into two groups

1. Anterior smaller group (but numerous air cells) consisting of agger cells, bulbar cells and frontal cells which open into upper part of hiatus semilunaris in the middle meatus. (bulla ethmoidale also called as middle ethmoidal group of sinuses).

POSTERIOR GROUP OF PNS

1. POSTERIOR ETHMOIDAL SINUS

Posterior group of ethmoidal sinus is larger (with a few cells). It opens into the superior meatus of nose. Optic nerve lies in close proximity to these cells.

Blood and nerve supply

It is supplied by anterior and posterior branches of ophthalmic and spheno-palatine artery (which lies near the roof of the sinus and should be taken care of during ethmoidectomy).

Venous drainage is by corresponding veins.

Nerve supply is by branches of maxillary and ophthalmic nerve (naso ciliary branch) which form the anterior and posterior ethmoidal nerves.

2. SPHENOID SINUS

The capacity of sphenoid sinus varies from 0.5ml to 30ml with an average of 7.5ml.

SITUATION

The right and left sphenoidal sinuses are usually un-equal in size which lies within the body of the sphenoid bone separated by a septum.

It is superiorly related to optic chiasma and hypophysis cerebri and laterally to the internal carotid artery and the cavernous sinus.

Ostium lies in the upper part of anterior wall and opens into the spheno ethmoidal recess. Bones of bertin also called sphenoidal turbinates initially cover the anterior wall of sinuses; but after 10 years fuse with it.

Types – Sellar, Presellar, Mixed and Conchal with sellar.

Blood and nerve supply: It is supplied by Posterior ethmoid and spheno-palatine arteries and drained by veins of nasal cavity. Nerves by branches of spheno-palatine ganglion.

OSTEO-MEATAL COMPLEX

A common pathway for drainage and ventilation of frontal, maxillary and anterior ethmoidal sinus.

A functional entity that includes

a. Middle turbinate

b. Hiatus semilunaris

c. Uncinate process

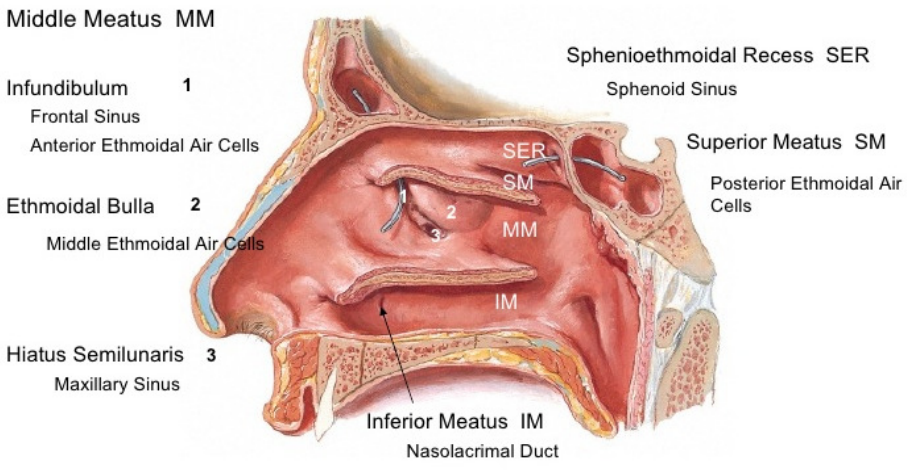
d. Ethomoidal bullae

e. Infundibulum

Ethmoidal bullae-Rounded elevation produced by the underlying middle ethmoidal sinus.

- Hiatus semilunaris – A deep semicircular sulcus below the bulla
- Infundibulum – A short pasage at the anterior end of hiatus semilunaris
- Uncinate process- A curved lamina projecting from the ethmoidal labyrinth and forms the medial wall of maxillary sinus.

OSTEOMEATAL COMPLEX



FRONTAL SINUS COMMUNICATIONS

It opens into the middle meatus of nose at the anterior end of the hiatus semilunaris, either through the infundibulum or through the frontonasal duct.

The right and left sinuses are usually unequal in size separated by a thin plate of bone. The sinuses are better developed in males than females. It is lined with columnar epithelium.

MAXILLARY SINUS COMMUNICATIONS:

It is lined with ciliated columnar epithelium; it opens into the middle meatus of the nose in the lateral part of the hiatus semilunaris and the opening lies just below the bulla ethmoidalis. The openings are near the roof than the floor of the sinus. So the opening is situtated much higher than the floor of the sinus in disadvantageous position for the natural drainage. It is richly provided with glands which are chiefly situated around the ostium.

ETHMOIDAL SINUS COMMUNICATION:

Each sinus opens into the spheno-ethmoidal recess and opens into the superior meatus of nose.

PHYSIOLOGY –PARANASALSINUSES

PNS are lined by mucosal blanket. Mucosal blanket is of 2 layers a superficial viscous and underlying serous layer. Mucosa constantly produces mucus- a pint a day which is constantly propelled backwards by the cilia to the posterior chonae, whence it is swallowed, usually unnoticed.

SINUSITIS

Sinusitis comes from latin ‘sinuo’ meaning “bend, wind, curve” and greek its meaning “pertaining to”.

It is the inflammation of mucosal lining of paranasal sinuses. Inflammation may be suppurative or non suppurative. Although most cases of sinusitis involve more than one sinus, maxillary sinus is the most commonly involved, followed in frequency by the ethmoid, frontal and sphenoid sinuses. Sinusitis affects the tremendous proportion of population, accounts for millions of visits to primary care physicians each year.

Epidemiology

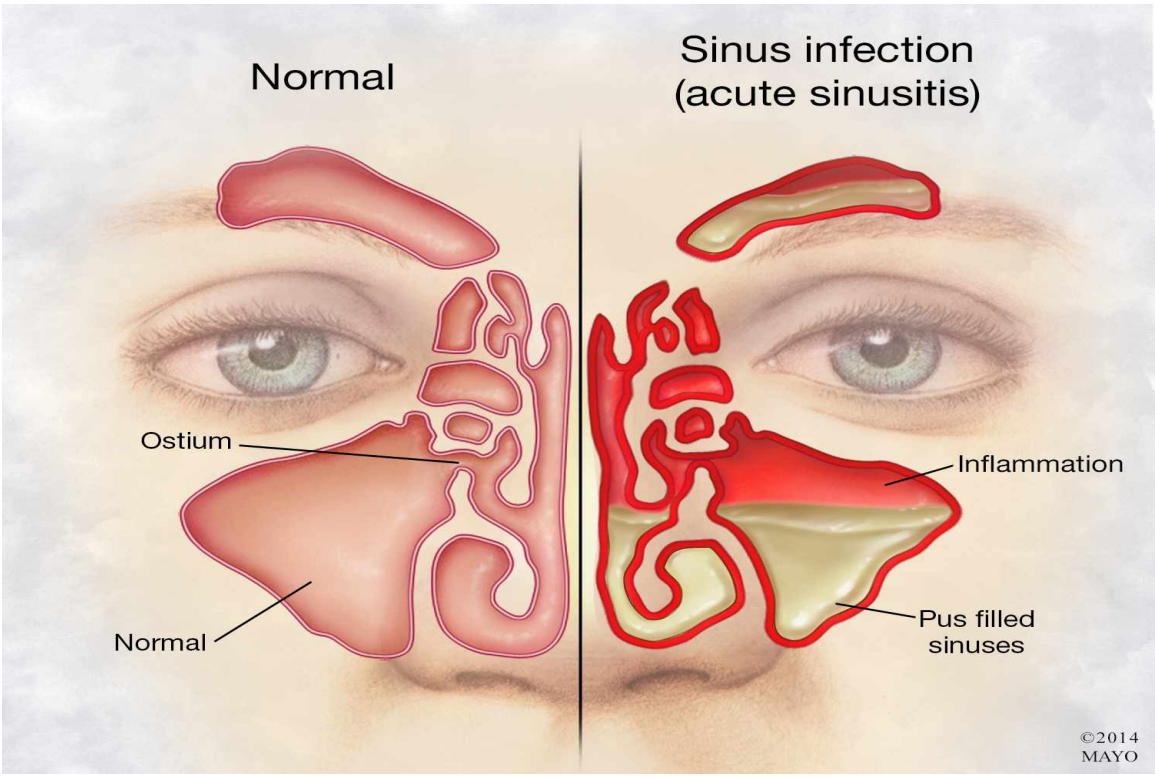
More than 120 millions of Indians suffer from atleast one episode of acute sinusitis each year. extrapolated prevalance of sinusitis in India is 1,065,07,607. It is fifth leading diagnosis for which antibiotics are prescribed in India.

Pathophysiology

The physiology of normal sinuses is maintained by three components that allow effective and continuous clearance of secretion predisposition to bacterial sinusitis occurs when any of the following three components gets disturbed.

a. Normal secretion of sinus
b. Properly functioning cilia
c. Patent sinus ostia

PATHOLOGY OF SINUSES



Due to infection the cilia gets damaged, which results in inadequate drainage of sinus cavity, especially the maxillary sinus, where the ostium is situated. The stagnated secretion lead to reinfection.

Pan sinusitis

Inflammation process occurs in all the sinuses resulting is pan sinusitis.

Four pairs of sinuses, known as paranasal air sinuses, connect to the nasal passage.

- ❖ Frontal sinuses which is present behind forehead.
- ❖ Maxillary sinuses which is present behind cheekbones.
- ❖ Ethmoid sinuses present behind the nose
- ❖ Sphenoid sinuses present behind the eyes.

When these sinuses are blocked or too much mucus are produced in the chambers, bacteria and other germs can grow more easily, leading to infection and inflammation.

CLASSIFICATION

It is typically classified by duration of illness, by etiology and when infections occurs by the offending pathogen type

- ➢ Acute sinusitis
- ➢ Subacute sinusitis
- ➢ Chronic sinusitis
- ➢ Recurrent

ACUTE SINUSITIS

DEFINITION

Acute sinusitis is defined as sinusitis that often lasts upto 4 weeks. It results once the normal defences of mucociliary blanket are breached by viruses and secondary invasion by bacteria takes place. Acute sinusitis is generally a complication of acute or allergic rhinitis and rarely secondary to dental sepsis.

Sinusitis is often classified in terms of locations where all they occur.

- Acute maxillary sinusitis
- Acute ethmoiditis
- Acute frontal sinusitis
- Acute sphenoiditis

AETIOLOGY:

- Trauma to sinuses
- Swimming and bathing
- General diseases like influenza, whooping cough, pneumonia
- Infections;
    1. Nasal infections-Hay fever, Acute rhinitis associated with common cold.
    2. Pharyngeal Infections-Tonsilitis, Adenoiditis in children.
    3. Tooth infections – Chronic dental infections, Periodental abscess and sometimes tooth extraction.

PREDISPOSING FACTORS

- Hay fever and other allergic conditions
- A nasal passage abnormality-deviated nasal septum, nasal polyps or tumours.
- Medical conditions like cystic fibrosis, gastro esophageal reflux disease, auto immune disorder.
- Regular exposure to pollutants such as cigarette smoke.
- Dental sepsis.

BACTERIOLOGY

Viruses: (90-98% of acute sinusitis)

- Rhino virus
- Parainfluenzae I and II
- Enteric cytopathogenic human orphan (ECHO) 28
- Coxsackie A 21
- Respiratory syncitial virus

Bacteria

- Haemophilus influenza (48%)
- Pneumococci (29%)
- Staphylococci (6.6%)
- Streptococci
- Escherichia coli
- Micrococcus catarrhalis
- Bacillus pfeiffer

Specific infections:

Due to fungi, tuberculosis and leprosy.

PATHOLOGY

Passes through five stages,

- ❖ Catarrhal stage
- ❖ Exudative stage
- ❖ Suppurative stage
- ❖ Stage of complications
- ❖ Stage of resolution

Clinically it may be catarrhal type or suppurative type.

CLINICAL FEATURES

General symptoms

- Malaise
- Headache
- Fever (not very high)
- Sore throat
- Facial pain
- Peri orbital odema

Local symptoms

- Feeling of discomfort in postnasal space.
- Nasal obstruction
- Loss of vocal resonance
- Loss of sense of smell

- Nasal or postnasal discharge or drip
- Cough
- Sneezing
- Pain in the sinuses is often classified in terms of location
    - Antral pain: Along the infraorbital margins and referred to the upper teeth or gums on the affected side.
    - Ethmoidal pain: Over bridge of the nose and inner canthus of eye and is referred to parietal eminence.
    - Frontal sinus pain: Localised to forehead and pain is periodical in nature i.e. Starts an hour or two after getting up from bed and vanishes during afternoon.
    - Sphenoidal pain: Gives rise to occipital or vertical headache and sometimes referred to the mastoid process. Pain may be felt behind the eyeball due to close proximity with Vth nerve.

Signs:

- Flushing of cheeks with swelling of cheeks which may spread into lower eye lid in maxillary sinusitis. Upper eye lid may be swollen in Frontal sinusitis. Ethmoiditis may give rise to swelling at the inner canthus of the same eye.
- Tenderness over the affected sinus

1. Cheek	:	Maxillary sinusitis
2. Floor of sinus	:	Frontal sinusitis
3. Inner canthus	:	Ethmoidal sinusitis

- Anterior rhinoscopy: Red, shiny and swollen mucous membrane near the ostium of the sinus and trickle of pus may also be seen.

INVESTIGATIONS:

1. Haematology – TC,DC and ESR are increased
2. Sputum Culture sensitivity Test
3. Trans illumination Test
    - Maxillary sinus – absence of infra orbital crescent of light and papillary glow absence indicate sinusitis.
    - Frontal sinus illumination is not very informative.
4. X-Ray PNS- to demonstrate fluid level, pus or opacity.
5. CT scan-Coronal CT may show thickening of mucosa or opacification with occlusion of maxillary infundibulum

DIFFERENTIONAL DIAGNOSIS

1. Dental neuralgias, carries, apical infections or abscess.
2. Temporo mandibular neuralgia (costen syndrome) due to stress and strain of tympanic membrane.
3. Trigeminal neuralgia-it is severe and paroxysmal
4. Migraine-unilateral and frontal pain
5. Temporal arteritis-pain over the course of temporal artery which is palpable and tender to touch.
6. Naso – pharyngeal tumours
7. Brain stem lesions
8. Herpetic and post herpetic neuralgia may stimulate sinusitis

9. Insect bite
10. Neoplasm of the sinuses.

TREATMENT

Prophylactic Treatment

1. Strengthen first line of defense i.e. mucous/cilliary blanket.
2. Sunshine, good ventilation and proper humidity.
3. Good diet rich in vitamins
4. Avoid swimming in cold water.
5. Use vaccines (autogenous vaccines)

Medical treatment

Antibiotics

Local decongestants

Analgesics

Surgical Treatment

Limited surgery is also done in case of impending complications such as orbital cellulitis.

COMPLICATIONS OF ACUTE SINUSITIS

- Osteomyelitis of maxilla and frontal bone
- Orbital cellulitis
- Orbital abscess formation
- Intracranial complications like cavernous sinus thrombosis, meningitis and intracranial abscess.
- Chronic sinusitis

- Middle ear infections
- Pharyngitis
- Laryngitis/Tracheobronchitis
- Mucocele/Pyocele
- Oroantral fistula

PREVENTION

- Avoid upper respiratory tract infections
- Carefully manage your allergies.
- Avoid cigarette smoke and polluted air.
- Use a humidifier.

ACUTE RECURRENT SINUSITIS

This is quite common. Each attacks clears up totally before the next commences. The mucosa of the sinus returns to normal between attacks.

The aetiological factors include,

- Poor resistance
- Anatomical abnormalities
- Recurrent viral upper respiratory tract infections.

CHRONIC SINUSITIS

It is a chronic inflammation of mucous membrane which has resulted in irreversible, usually degenerative changes. Symptoms lasting for more than 12 weeks. The illness is most commonly associated with either bacteria or fungi. Patients often suffer significant morbidity, sometimes over many years.

AETIOLOGY

Chronic sinusities follows acute condition, the cause of which is same as in acute condition. In addition the following causes are also responsible for chronic sinusitis.

- Asthma
- Chronic bronchitis
- Chronic bronchiectasis

PREDISPOSING FACTORS

- Deviated nasal septum
- Hypersensitivity reaction
- Dental sepsis
- Poor immunity
- Alcohol
- Allergens

  Plant pollens

  Drugs

  Dust materials
- Allergy subjects are more prone to secondary bacterial infections.
- Inflammatory products itself may act as allergens inducing further changes in the mucosa of the nose and PNS.
- Iatrogenic factors, naso-gastric or naso-tracheal tubing.

Pathology

According to histological changes in the sinus mucosa is as follows:

- **Hypertrophic sinusitis** inflammation mainly affects the efferent vessels and lymphatics. If repeated attacks occur the venous and lymphatic change produce edema and polypoidal mucous membrane.
- **Atrophic sinusitis**-Inflammation occurs in the afferent vessels causing cellular reaction leading to endarteritis and thrombosis. Both atrophic and hypertrophic types occurs side by side in the same sinus.
- **Papillary sinusitis** Metaplasia of ciliated columnar to stratified squamous epithelium type. It is a viral infection.
- **Follicular type** small follicles are seen in the mucous membrane of the sinuses.
- **Glandular sinusitis**-Glandular elements markedly increase in the submucosal tissue lining of sinuses.

Types of chronic sinusitis

- **Simple chronic infective sinusitis** – It usually follows a single or repeated attacks. Vasomotor rhinitis and allergy are absent.
- **Mixed infective and vasomotor chronic sinusitis** – Vasomotor factor is probably primary in most of the patients. A secondary infection results from chronic obstruction of the ostium and polyposis.
- **Fungal sinusitis** - It occurs in traumatic cases with compound fractures in uncontrolled diabetics, debilitiated patients such as carcinoma. Types of fungal infections may be Aspergillosis, acinomycosis and mucomycosis.

Clinical features

- Nasal symptoms-nasal obstruction, nasal discharge and post nasal drip.
- Epistaxis
- Abnormal smell sensations, cacosmia, hyposmia or parosmia.
- Vestibulitis
- Excoriations of the skin of nose.
- Pharyngitis
- Dryness of throat
- Tonsillitis
- Lymphadenitis
- Otitis media
- Periodicity of headache is due to secretions accumulating in the sinuses during night and then draining away as the patient attains the erect posture.
- Conjunctivitis
- Fever, cough and hoarseness of voice

Signs

Anterior Rhinoscopy

- It shows red swollen mucosa with pus in the middle meatus which can be made to appear by putting the head between the knees with infected sinuses upwards and then raising the head again.
- In ethmoiditis the middle turbinate may be hypertrophied and polyp may be present.

- In spheenoid sinusitis the pus may be seen in the olfactory cleft.

Posterior Rhinoscopy

- Pool of pus in the upper surface of the palate and in posterior end of inferio turbinate indicates infection of anterior group of sinuses.

Complications of Anterior Group

- Orbital complications-orbital cellulitis, abscess
- Mucocele/pyocele
- Oroantral/sublabial fistulae
- Intra-cranial complications such as thrombo-phlebitis, brain abscess, extradural abscess and basal meningitis.
- Potts puffy tumour-swelling of the fore-head due to osteomyelitis of frontal sinuses which gives moth eaten appearance in X-rays.

Complications of Posterior Group

- Superior orbital fissure syndrome
- Cavernous sinus thrombophlebitis
- Oro antral fistula
- Optic neuritis with impaired vision.

MATERIALS AND METHODS

Selection of the patients:

For this study, 20 patients of both sexes in different age groups, suffering with "KabhaPeenisam"(sinusitis) were screened and selected in Outpatients department of Pothu Maruthuvam department and admitted in the Inpatient ward of Pothu maruthuvam department of Govt. Siddha Medical College and Hospital, Palayamkottai.

Another 20 patients were also treated with the clinical trial medicine in the out patient department of pothu maruthuvam of Govt. Siddha Medical College, Palayamkottai.

Clinical Evaluation:

In this study the detailed clinical history, occupation, personal history, related past history and food habits were taken from the patients.

Special efforts were made to evaluate clinical parameters by a detailed history taking of the symptoms includes sneezing, headache, pain in frontal & maxillary region, running nose, otalgia, fever, nasal congestion etc.

The case sheets were prepared based on both siddha and modern diagnostic parameters.

Siddha Diagnosis:

Siddha diagnosis was made with the help of following parameters such as Nilam, Paruvakalam, Thegam, Kaalam, Gunam, Poriyal arithal, Pulanal arithal, Mukkutram, Seven udarkattukal, Envagai thervugal etc.

And the diagnosis **"KabhaPeenisam"** would be corelated with **"Sinusitis"** made by the physical examination of the patient as well as by laboratory and radiological investigations.

Laboratory Investigations:

All the cases were subjected to investigations including TC, DC, ESR, Hb, Blood Sugar, Urea, Serum Cholesterol, Absolute Eosinophil Count and urine test for albumin, sugar, deposits in the laboratory of Govt.Siddha Medical College and Hospital, Palayamkottai.

Radiological Investigations:

- X-Ray - skull PNS was taken in all the patients to rule out the sinusitis.

These siddha and modern investigations were very useful to assess the prognosis of the disease.

Trial Medicines:

Perunjchiraka Chooranam - 2gm, Twice daily after meal.

Reference:

Gunapadam Mooligai Vaguppu- Page No: 467,468.

Evaluation of trial medicines:

The trial medicine was subjected to pharmacological and toxicity study in Periyar College of Pharmaceutical Trichy. The microbiological study was done by Malar micro Diagnostic centre, Palayamkottai.

The observations were made from both 20 Inpatients & 20 out patients based on the clinical improvement and investigation parameters. This result and observations were properly recorded in the proforma of this clinical study.

At the time of discharge all the patients were advised to follow the diet control, personal hygiene, adequate water intake and mental relaxation by yoga, meditation etc. Then they were advised to follow further treatment in the outpatients department of Pothu Maruthuvam for follow up study.

OBSERVATION AND RESULTS

The results were observed regarding the following criteria by clinical study on 20 In patients and 20 Out patients, totally 40 patients was carried out in this study.

- Gender distribution
- Age distribution
- Kaalam
- Chronicity of illness
- Religion
- Gunam
- Thinai
- Paruvakaalam
- Occupation
- Aetiology
- Socio-economic status
- Dietary habits
- Family history
- Clinical manifestation
- Mode of onset
- Imporigal(Gnanendhiriyam)
- Kanmendhiriyam
- Mukkutram

Derangement of vatham

Derangement of pitham

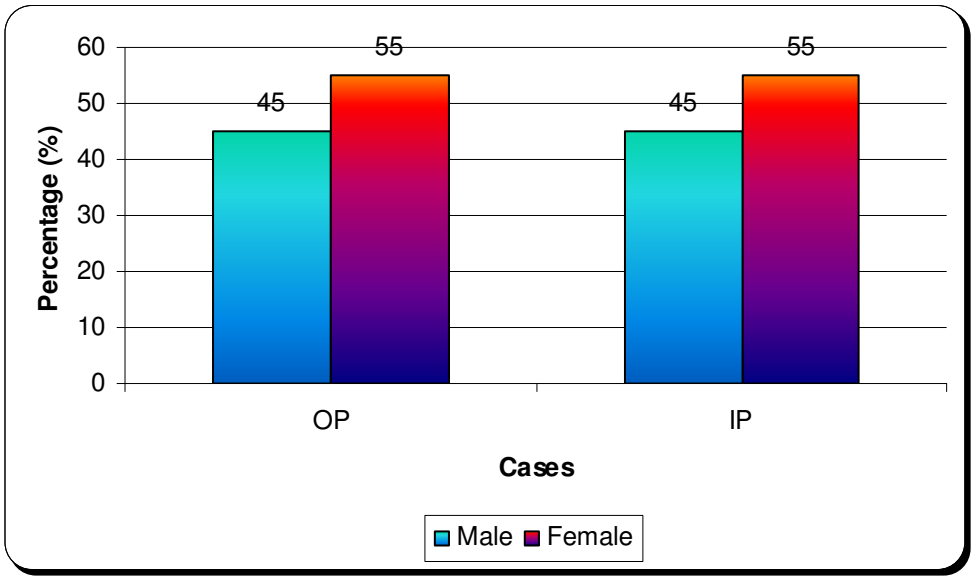
Derangement of kabam

- Ezhu udal kattugal
- Envagai thervugal
- Neer kuri
- Nei kuri
- Radiological investigations
- Improvement of clinical symptoms
- Laboratory investigations
- Gradation of results

1. GENDER DISTRIBUTION.

Table1 illustrates the distribution of sex

Sl. No	Sex	No. of Cases		Percentage %	
		OP	IP	OP	IP
1.	Male	7	10	35	50
2.	Female	13	10	65	50

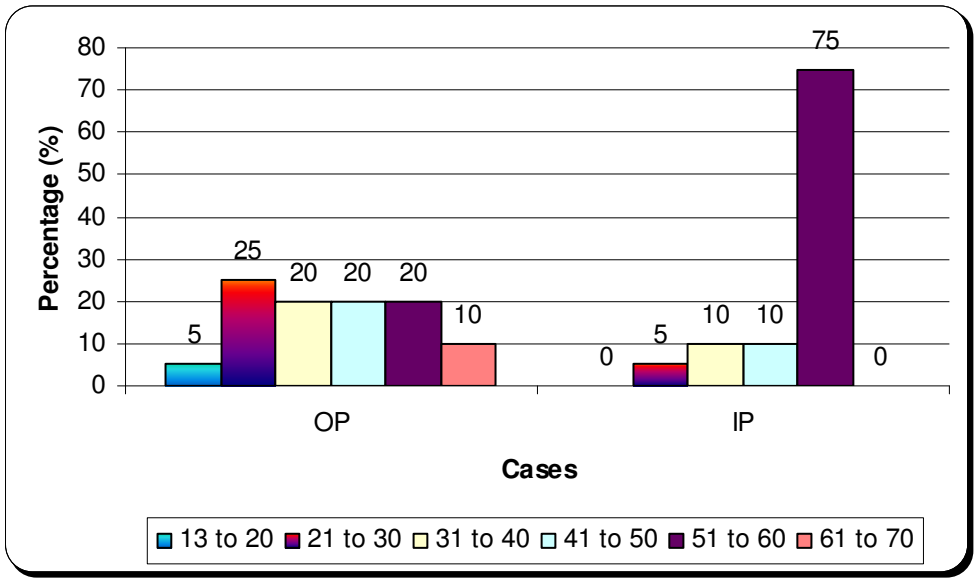


Inference: Among 40 cases the prevalence of the disease was found to be higher in female.

2. AGE DISTRIBUTION.

Table 2 illustrates the distribution of age.

Sl. No	Age groups in years	No. of .cases		Percentage %	
		OP	IP	OP	IP
1.	13 to 20	4	-	20	-
2.	21 to 30	4	1	20	5
3.	31 to 40	4	2	20	10
4.	41 to 50	8	14	40	70
5.	51 to 60	-	3	-	15
6.	61 to 70	-	-	-	-

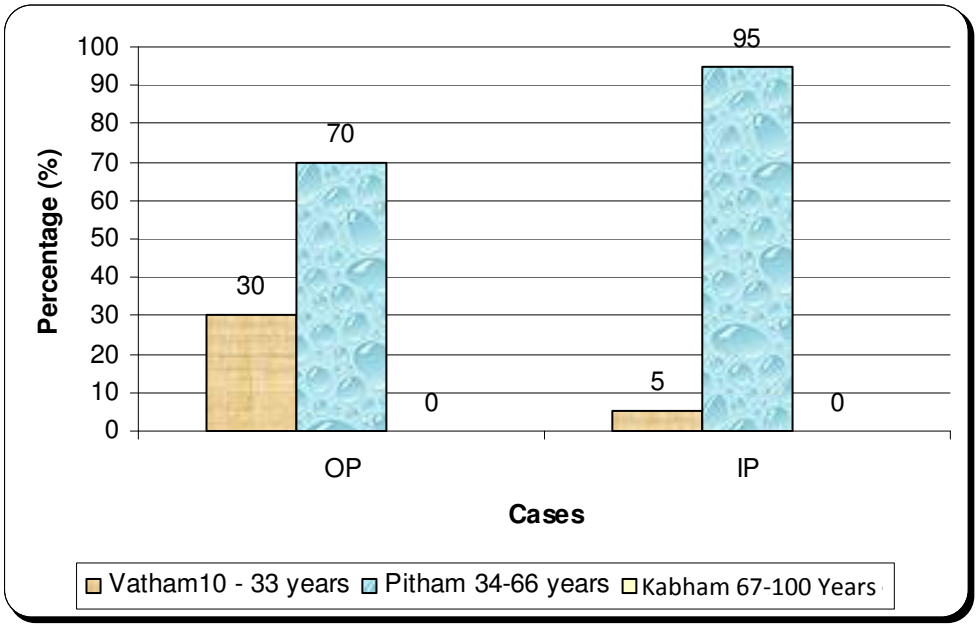


Inference: Among 40 cases, the prevalence of the disease was found to be higher among the age group of 51-60.

3. KAALAM [Life span]

Table 3 illustrates the distribution of Kaalam

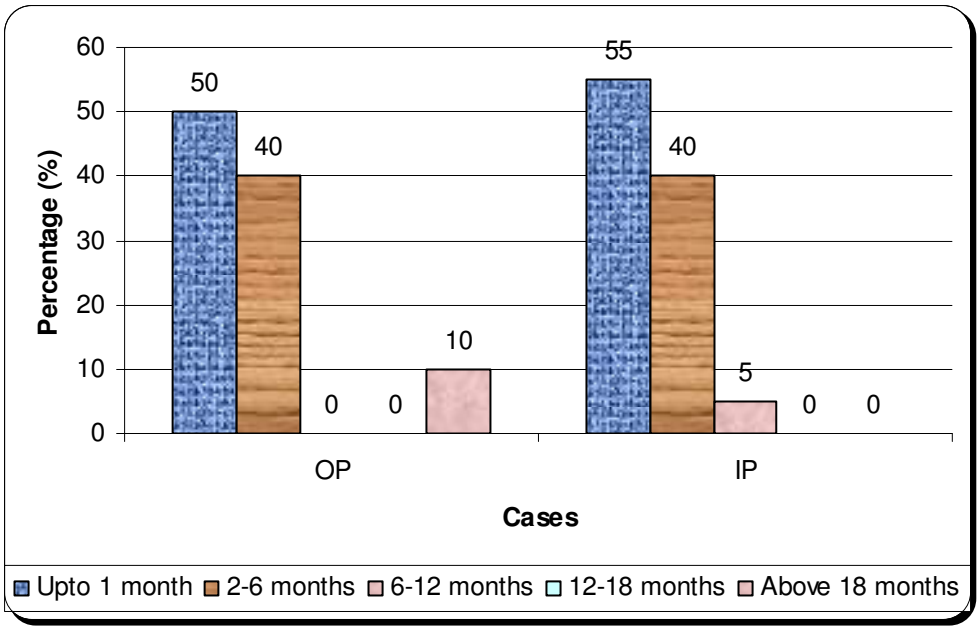
Sl. No	Kaalam	No. of cases		Percentage %	
		OP	IP	OP	IP
1.	Vatham 1-33 years	10	1	50	5
2.	Pitham 34-66 years	10	19	50	95
3.	Kabham 67-100 years	-	-	-	-



Inference: Among 40 cases the prevalence of the disease was found to be higher in Pitha kaalam.

4. CHRONICITY OF ILLNESS:

Sl. No	Chronicity of illness	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Upto 1 month	9	4	45	20
2	2-6 months	6	6	30	30
3.	6-12 months	4	6	20	30
4.	12-18 months	1	2	5	10
5.	Above 18 months	-	2	-	10

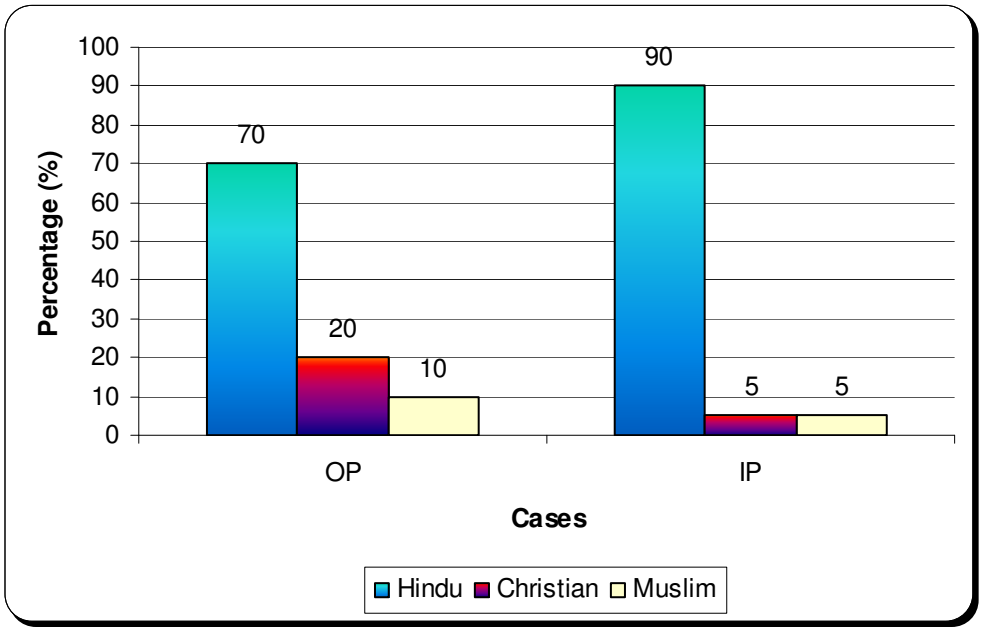


Inference: Among 40 cases, 21 cases had the illness within 1month; 16 cases had the illness 2-6 months; 1 case had the illness 6-12 months and 2 cases above 18 months.

5. RELIGION

Table 5 illustrates the distribution of Religion

Sl. No.	Religion	No. of. Cases		Percentage%	
		OP	IP	OP	IP
1.	Hindu	15	18	75	90
2.	Christian	2	1	10	5
3.	Muslim	3	1	15	5

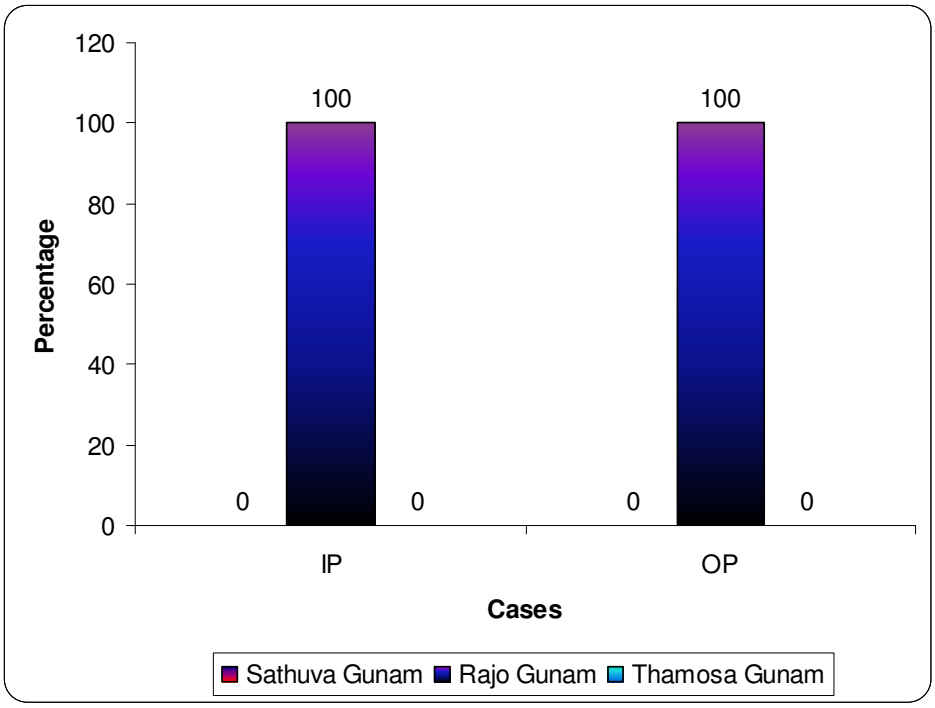


Inference: Among 40 cases the prevalence of the disease was found to be more among Hindus.

6. GUNAM

Table 6 illustrates the distribution of gunam

Sl. No.	Gunam	No. of cases		Percentage %	
		OP	IP	OP	IP
1.	Sathuva Gunam	-	-	-	-
2.	Rajo Gunam	20	20	100	100
3.	Thamosa Gunam	-	-	-	-

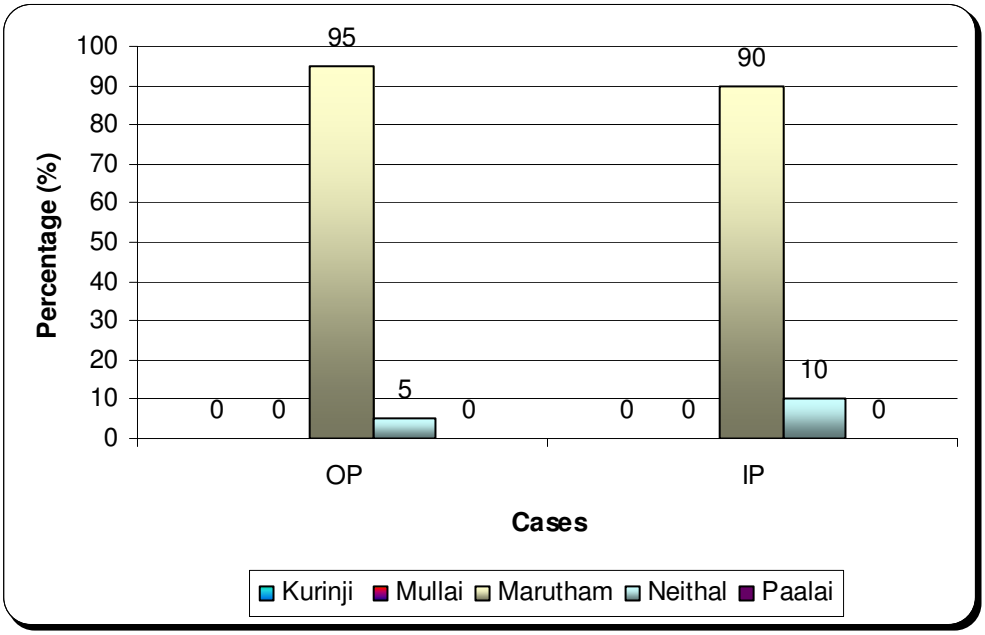


Inference: In both OP and IP study cent percentage belongs to Rajo Gunam.

7. THINAI.

Table 7 illustrates the distribution of the disease among the Thinai

Sl. No.	Thinai	No. of Cases		Percentage%	
		OP	IP	OP	IP
1.	Kurinji	-	-	-	-
2.	Mullai	1	2	5	10
3.	Marutham	18	16	90	80
4.	Neithal	1	2	5	10
5.	Paalai	-	-	-	-

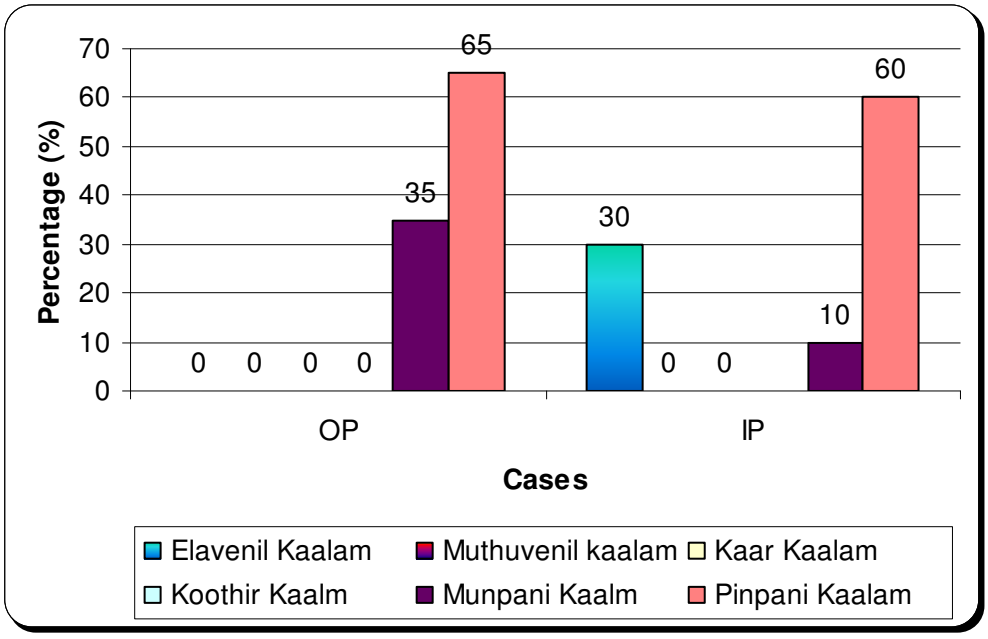


Inference: Among 40 cases Marutha nilam had the higher incidence of the disease.

8. PARUVAKAALAM

Table 8 illustrates the distribution of the disease among the Paruvakaalam.

Sl. No.	Paruvakaalam	No. of Cases		Percentage%	
		OP	IP	OP	IP
1.	Kaar kaalam	-	-	-	-
2.	Koothir kaalam	-	-	-	-
3.	Munpani kaalam	10	-	50	-
4.	Pinpani kaalam	10	1	50	5
5.	Elavenil kaalam	-	15	-	75
6.	Muthuvenil kaalam	-	4	-	20

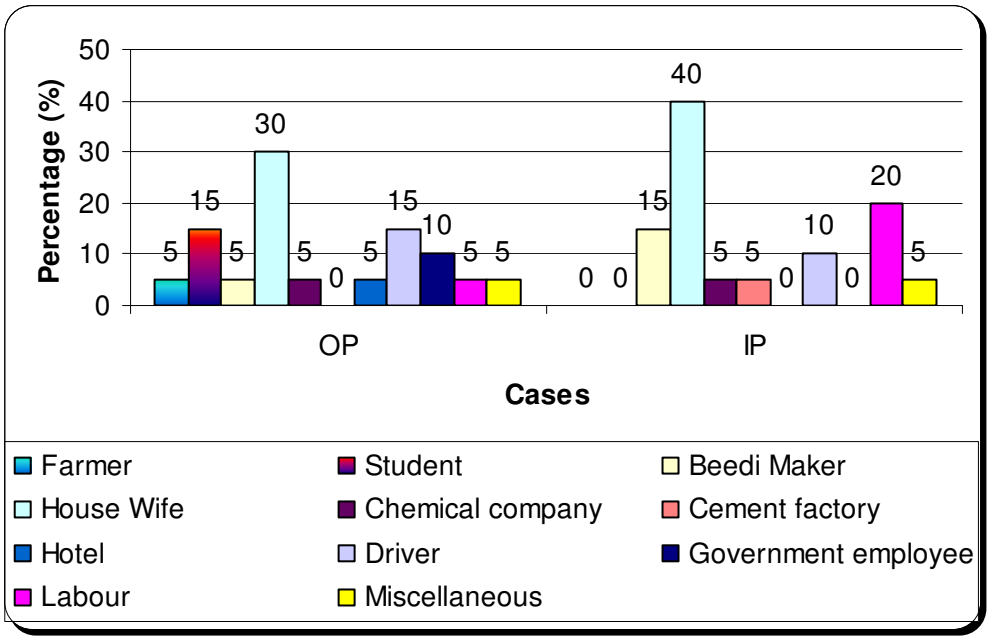


Inference: Among 40 cases the occurrence of the disease was found to be higher in Munpani and Pinpani kaalam.

9. OCCUPATION

Table 9 illustrates the distribution of occupation among the patients.

Sl. No.	Occupation	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Farmer	1	1	5	5
2.	Student	4	-	20	-
3.	Beedi Maker	2	4	10	20
4.	House Wife	7	3	35	15
5.	Chemical company	-	1	-	5
6.	Cement factory	1	1	5	5
7.	Hotel	-	1	-	5
8.	Driver	1	3	5	15
9.	Government employee	1	-	5	-
10.	Labour	2	4	10	20
11.	Miscellaneous	1	2	5	10

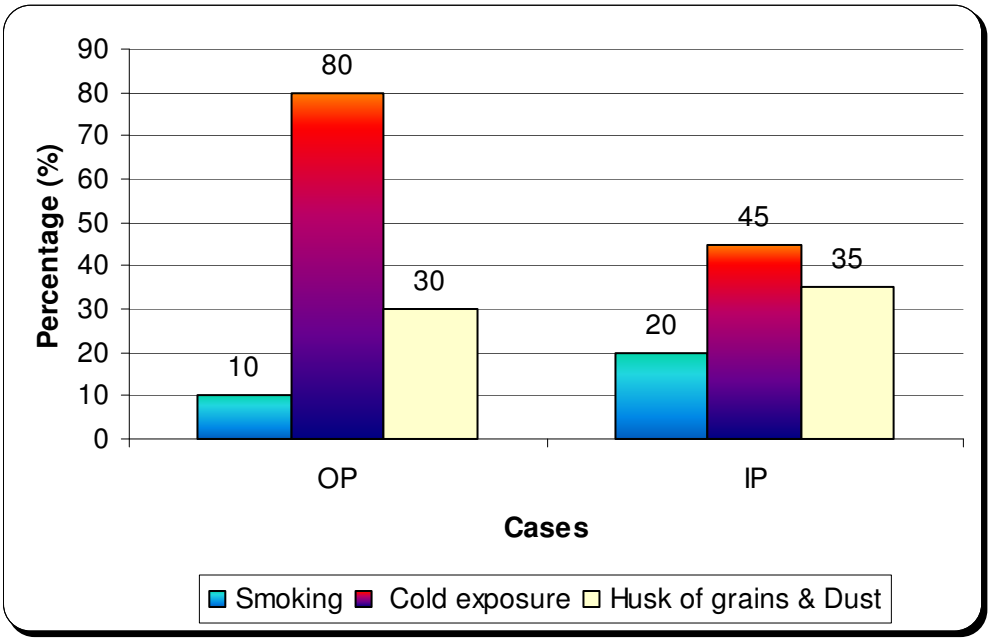


Inference: Among 40 cases the most prevalence of the disease occurs more in Students, driver, labour and House Wife.

10. AETIOLOGICAL FACTORS.

Table 10 illustrates the Aetiological factors for disease.

Sl. No.	Aetiological Factors	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Smoking	4	3	20	15
2.	Cold exposure	12	10	60	50
3.	Husk of grains & Dust	4	7	20	35

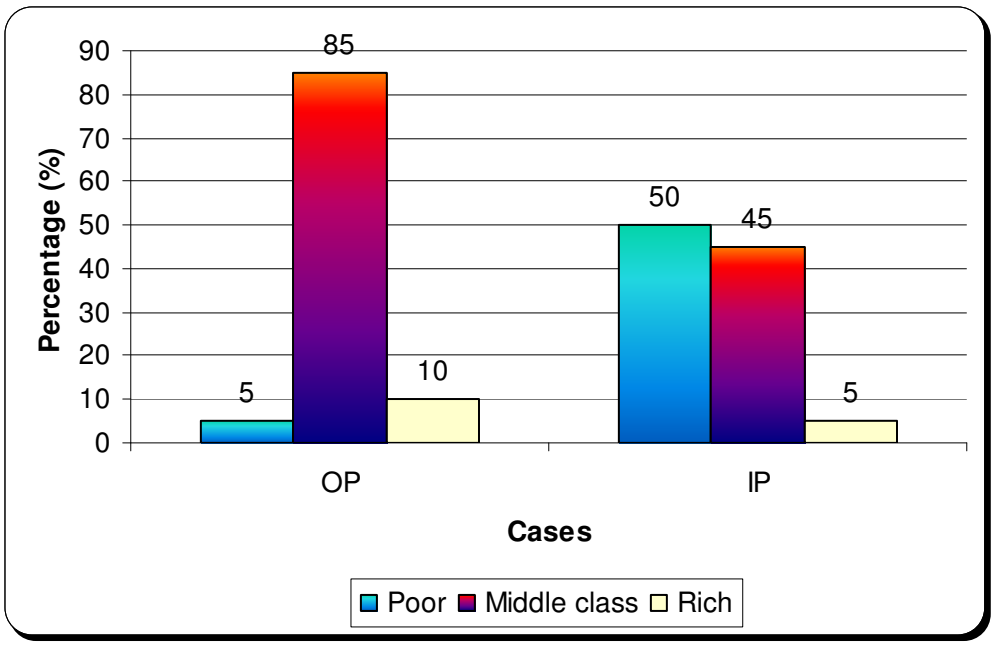


Inference: The above table showed dust and cold exposure were the main aetiological factors among the Patients.

11. SOCIO-ECONOMIC STATUS.

Table 11 illustrates the socio economic status of the patients.

Sl. No.	Socio- Economic Status	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Poor income group	2	9	10	45
2.	Middle income group	15	10	75	50
3.	Rich income group	3	1	15	5

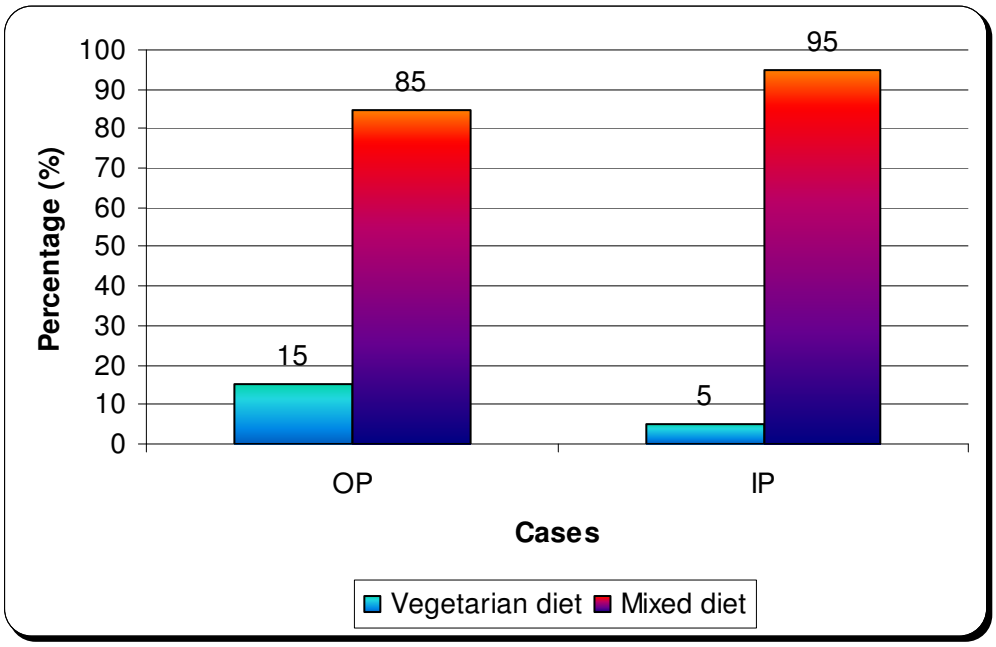


Inference: Among 40 patients, it is observed that the disease occured more among Middle income group.

12. DIETARY HABITS.

Table 12 illustrates the distribution of diet among the patients.

Sl. No.	Food habits	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Vegetarian diet	4	2	20	5
2.	Mixed diet	16	18	80	90

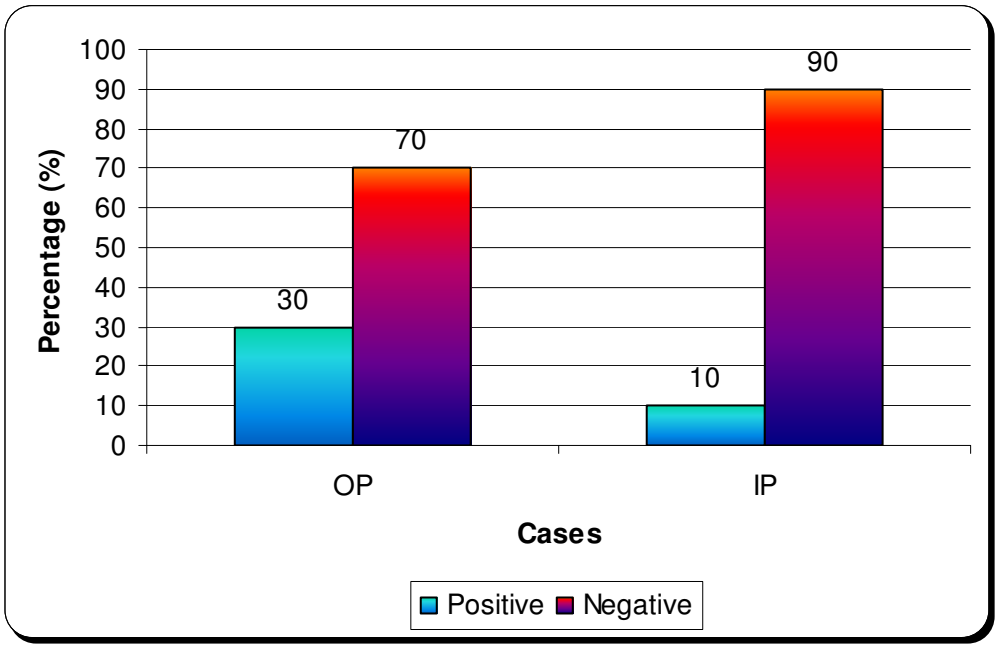


Inference: The table showed that highest incidence of the disease for the patients with mixed diet.

13. FAMILY HISTORY:

Table 13 illustrates the distribution of family history.

Sl. No.	Family History	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Positive	5	3	25	15
2.	Negative	15	17	75	85

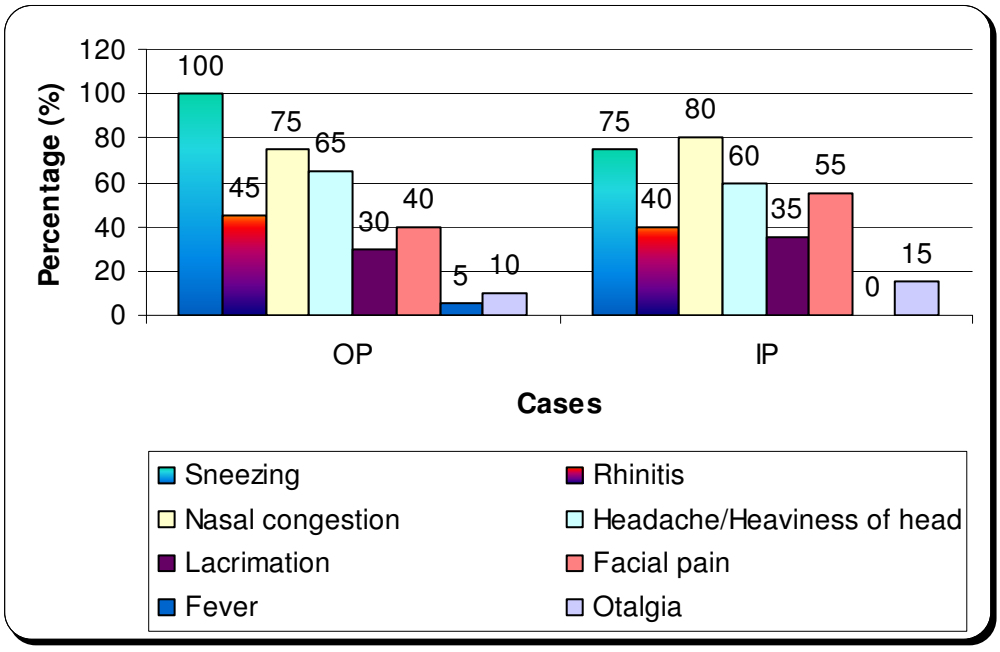


Inference: In inpatients 90% have no family history.

14. CLINICAL MANIFESTATION:

Table 14 illustrates the distribution of clinical manifestation

Sl. No.	Symptoms	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Sneezing	20	18	100	90
2.	Rhinitis	10	8	50	40
3.	Nasal congestion	15	16	75	80
4.	Headache/Heaviness of head	14	10	70	50
5.	Lacrimation	5	6	25	30
6.	Facial pain	7	9	35	45
7.	Fever	1	-	5	-
8.	Otalgia	3	2	15	15

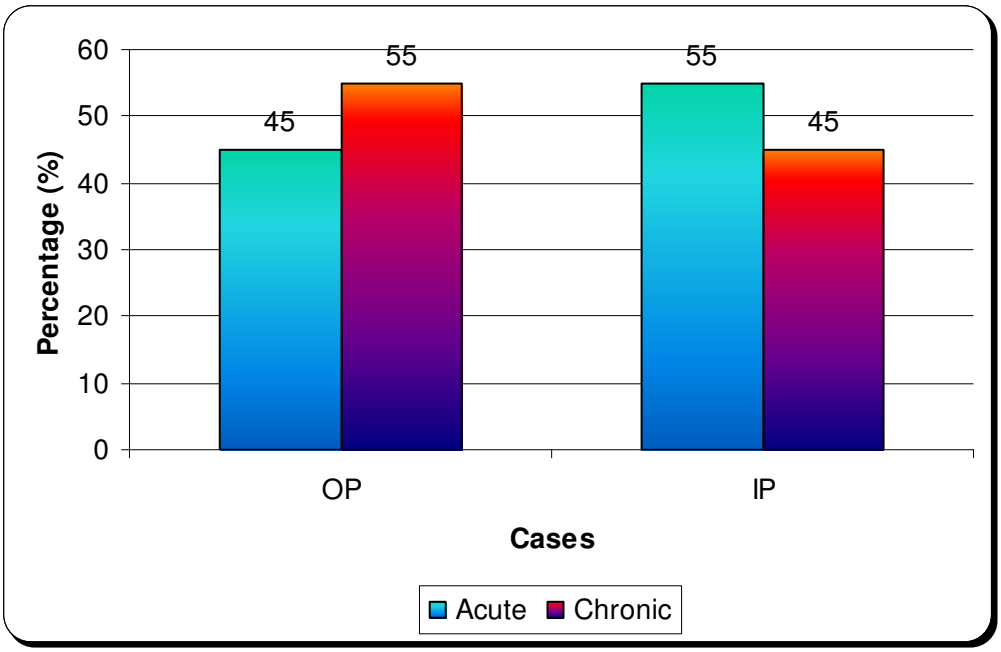


Inference: The table shows that most of the patients had Sneezing ,Nasal congestion, Headache.

15. MODE OF ONSET

Table 15 illustrates the distribution of Mode of onset of the disease.

Sl. No.	Mode of onset	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Acute	15	10	75	50
2.	Chronic	5	10	25	50

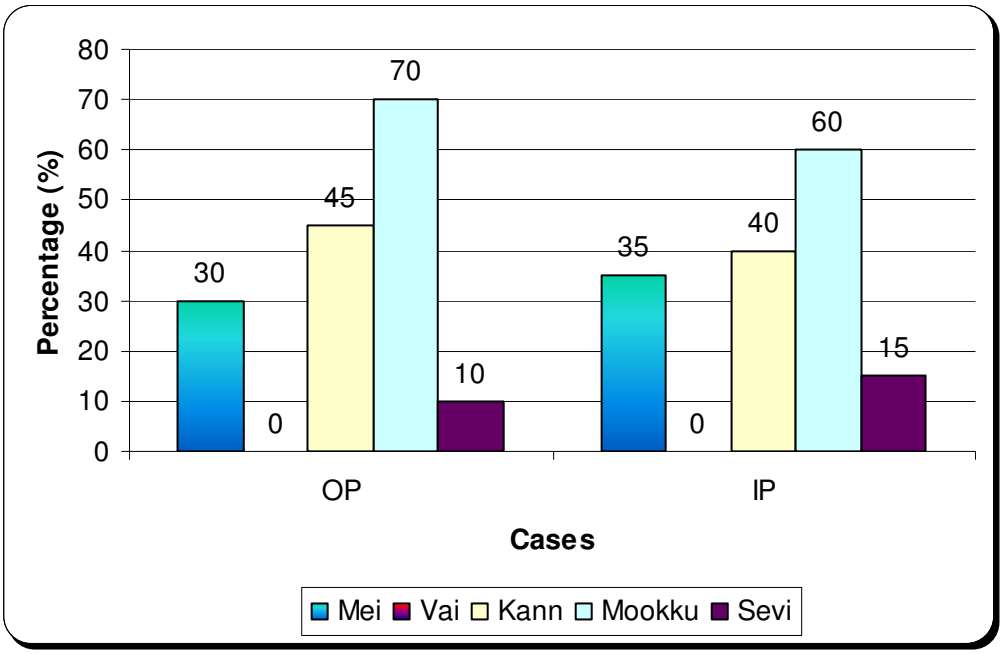


Inference: The table showed that the mode of onset was acute as well as chronic.

16. IMPORIGAL (GNANENDHIRIYAM)

Table 16 illustrates the distribution of disease with Imporigal.

Sl. No.	Imporigal (Gnanendhiriyam)	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Mei	5	6	25	30
2.	Vai	-	-	-	-
3.	Kan	8	7	40	35
4.	Mookku	15	13	75	65
5.	Sevi	2	2	75	65

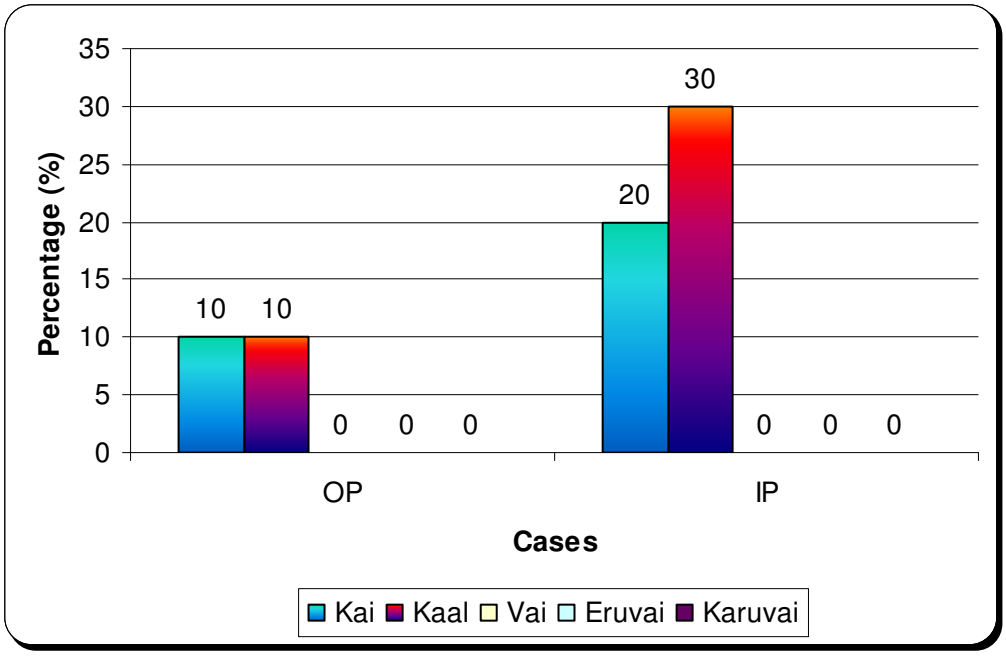


Inference: The table showed that Kann and Mookku were affected in most of the patient.

17. KANMENTHIRIYAM

Table 17 illustrates the distribution of disease with Kanmenthiriyam.

Sl. No.	Kanmenthiriyam	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Kai	3	6	15	30
2.	Kaal	3	4	15	20
3.	Vai	-	-	-	-
4.	Eruvai	-	-	-	-
5.	Karuvai	-	-	-	-

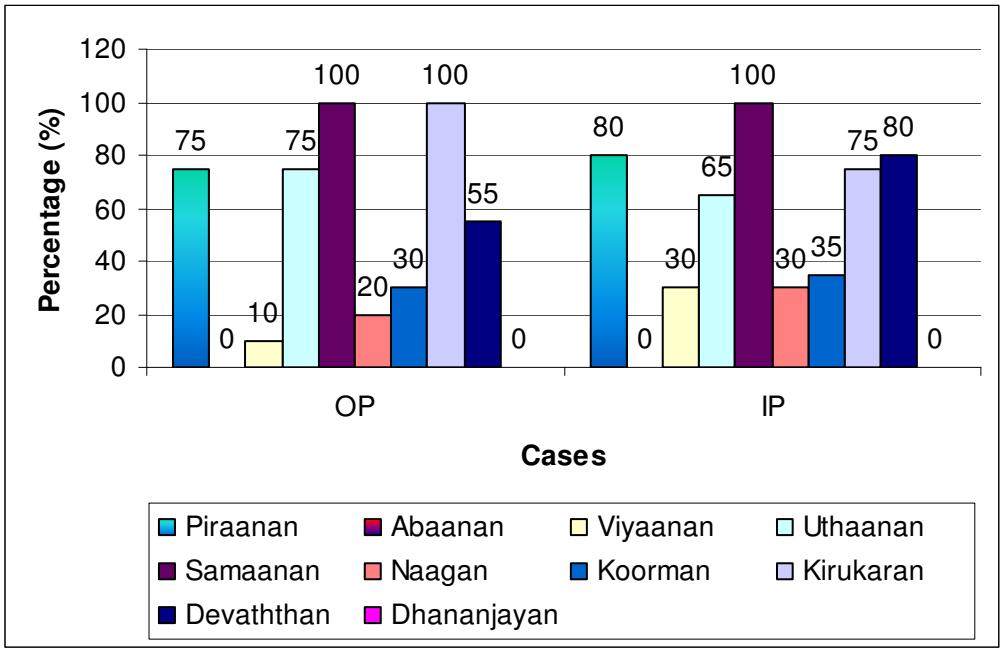


Inference: The table showed that kai and Kaal was affected in most of the patients

18. MUKKUTRAM

18. a. Derangement of vatham.

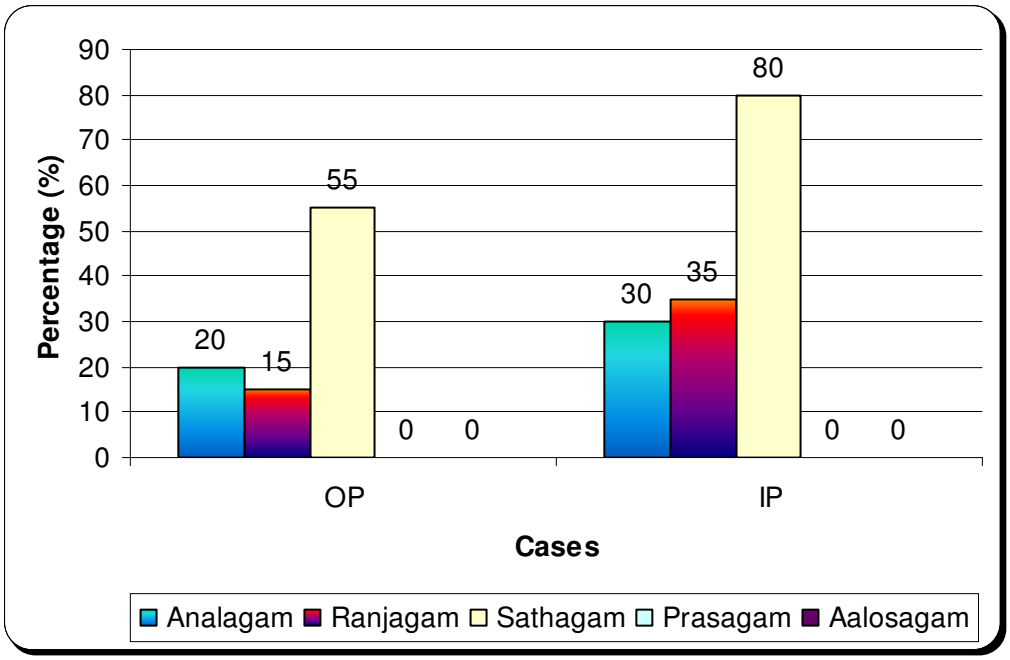
Sl. No.	Vatham	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Piraanan	16	18	80	90
2.	Abaanan	-	-	-	-
3.	Viyaanan	3	5	15	20
4.	Uthaanan	13	14	65	70
5.	Samaanan	20	20	100	100
6.	Naagan	4	5	20	25
7.	Koorman	8	6	40	30
8.	Kirukaran	20	18	100	90
9.	Devaththan	9	15	45	75
10.	Dhananjayan	-	-	-	-



Inference: In all the In patients & Out patients Samaanan, Kirukaran and Devaththan was affected.

18. b. Derangement of Pitham.

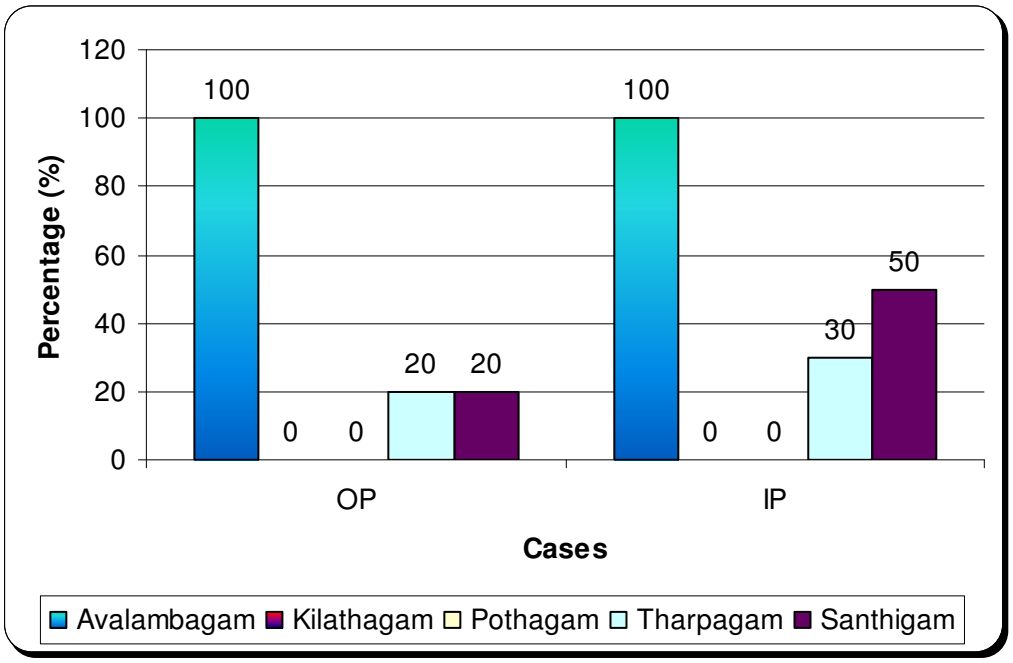
Sl. No.	Pitham	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Analagam	5	7	25	35
2.	Ranjagam	2	6	10	30
3.	Sathagam	12	14	60	70
4.	Prasagam	-	-	-	-
5.	Aalosagam	-	-	-	-



Inference: The table shows most of the patients affected with Sathagam.

18.c. Derangement of Kabam.

Sl. No.	Kabam	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Avalambagam	20	20	100	100
2.	Kilathagam	-	-	-	-
3.	Pothagam	-	-	-	-
4.	Tharpagam	6	4	30	20
5.	Santhigam	10	4	50	20

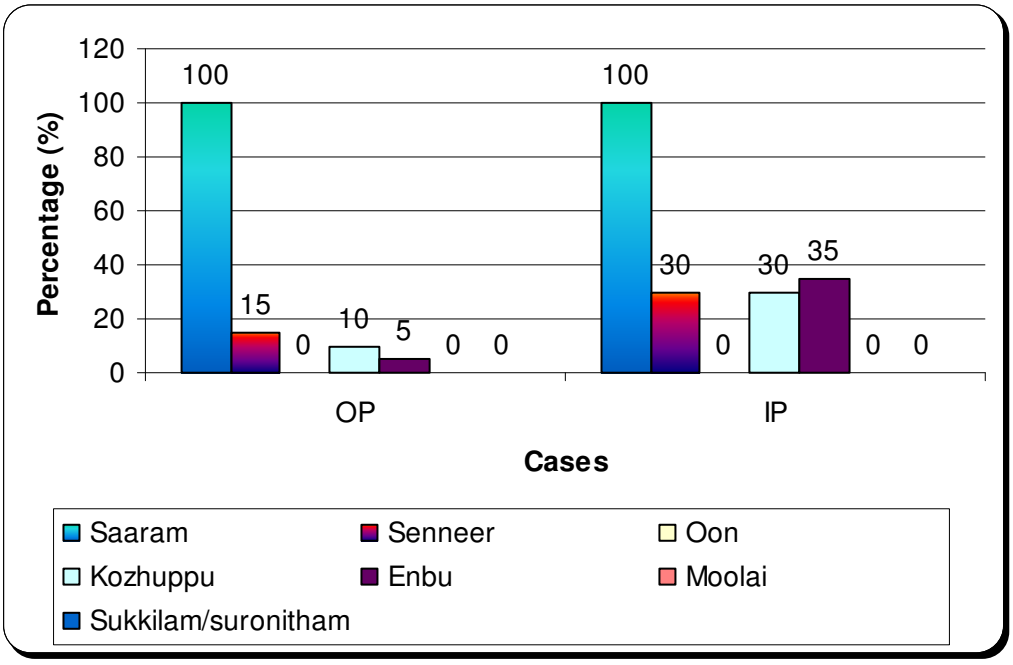


Inference: The table showed that the Avalambagam was affected in all the patients in this disease.

19. Ezhu udal kattugal

Table19. Illustrates the distribution of derangement of ezhu udal kattugal.

Sl. No.	Udal kattugal	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Saaram	20	20	100	100
2.	Senneer	4	5	20	25
3.	Oon	-	-	-	-
4.	Kozhuppu	3	7	15	35
5.	Enbu	2	5	10	25
6.	Moolai	-	-	-	-
7.	Sukkilam/suronitham	-	-	-	-

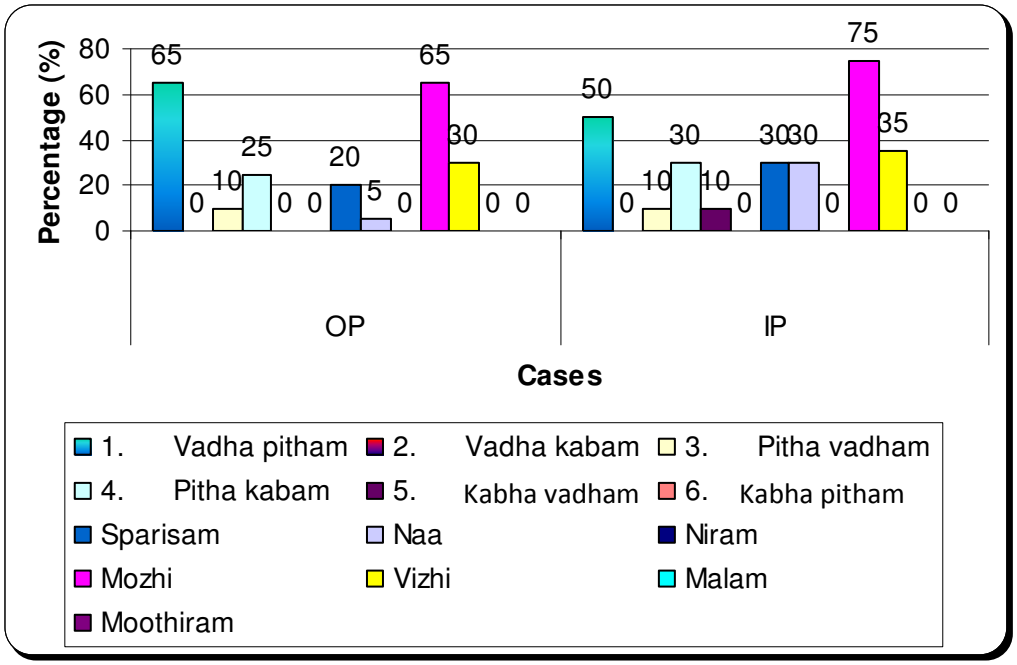


Inference: The table showed that Saaram was affected in all the patients in this disease.

20. ENVAGAI THERVUAL

Table 20 illustrates the distribution of envagai thervugal.

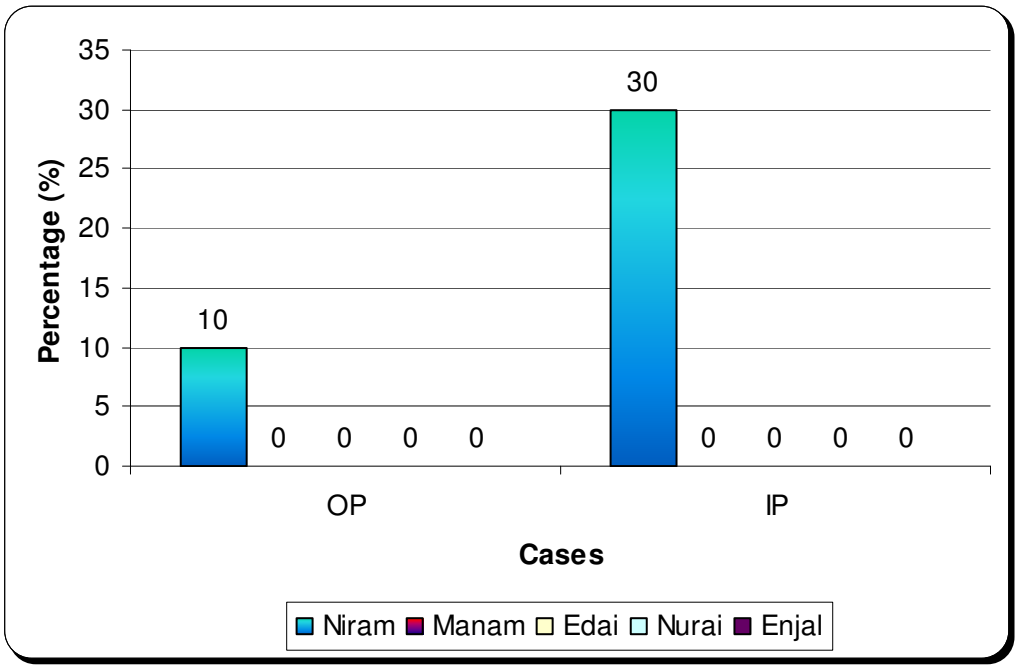
Sl. No.	Envagai thervugal	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Naadi (Thontha Naadi)	12	11	60	55
	1. Vadha pitham				
	2. Vadha kabam	-	-	-	-
	3. Pitha vadham	3	2	15	10
	4. Pitha kabam	5	5	25	25
	5. Kabha vadham	-	2	-	10
	6. Kabha pitham	-	-	-	-
2.	Sparisam	3	5	15	25
3.	Naa	2	6	10	30
4.	Niram	-	-	-	-
5.	Mozhi	12	13	60	65
6.	Vizhi	5	6	25	30
7.	Malam	-	-	-	-
8.	Moothiram	-	-	-	-



Inference: The table showed Mozhi, Naa, Vizhi & sparisam were affected in most of the patients. In Naadi, Vatha pitham showed higher frequency than the others.

21. NEER KURI

S.NO	Neer kuri	No of cases		Percentage %	
		OP	IP	OP	IP
1.	Niram	3	7	15	35
2.	Manam	-	-	-	-
3	Edai	-	-	-	-
4.	Nurai	-	-	-	-
5.	Enjal	-	-	-	-

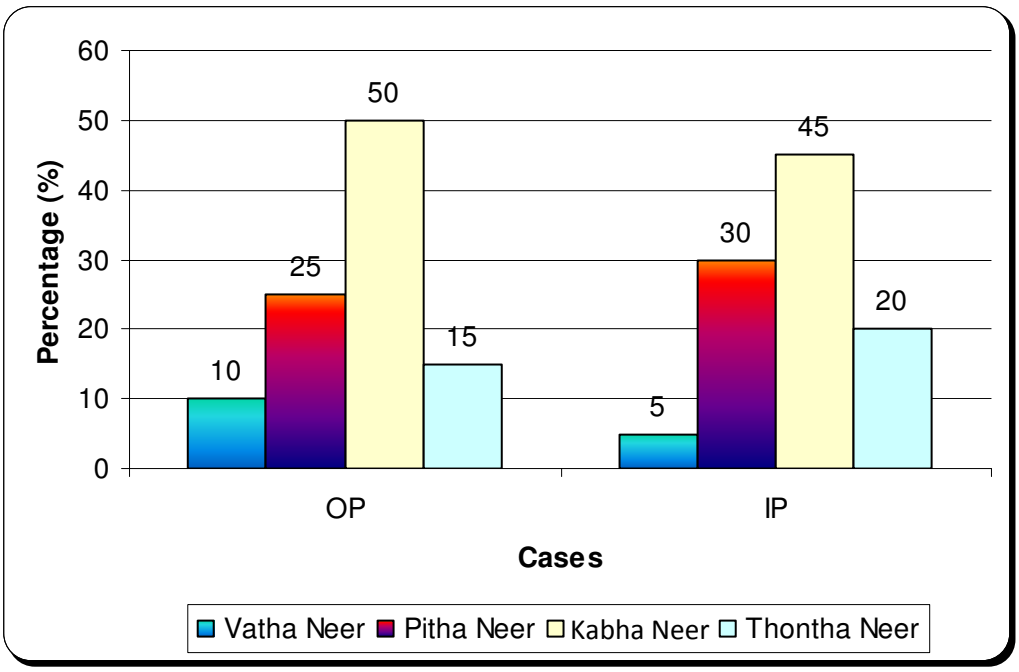


Inference: The table showed that Manam, Edai, Nurai and Enjal were not affected , Niram was affected in 10% of OP patients & 30% of IP patients.

22. NEI KURI

Table 22 illustrates the distribution of Nei kuri.

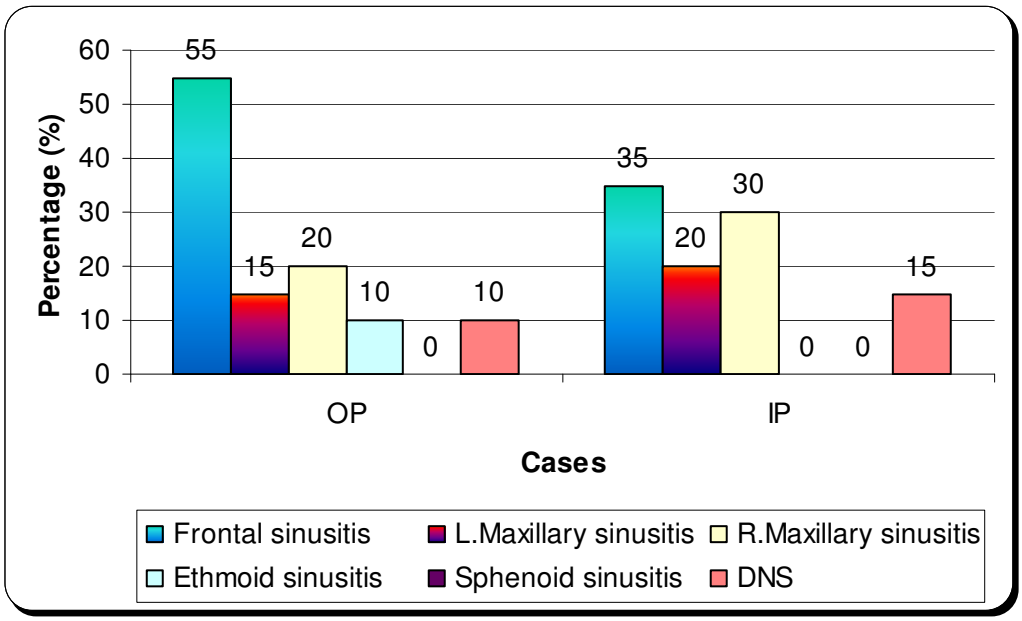
Sl. No.	Nei Kuri	No. of cases		Percentage%	
		OP	IP	OP	IP
1.	Vatha Neer	3	2	15	10
2.	Pitha Neer	4	5	20	25
3.	Kabha Neer	11	15	55	50
4.	Thontha Neer	2	3	10	15



Inference: The table showed that Kabha Neer was found in most of the cases.

23. Radiological examination:

X-Ray PNS	Outpatients		Inpatients	
	No. of cases	Percentage	No. of cases	Percentage
Frontal sinusitis	10	50	8	40
L.Maxillary sinusitis	4	20	4	20
R.Maxillary sinusitis	4	20	6	30
Ethmoid sinusitis	2	10	2	10
Sphenoid sinusitis	-	-	-	-
DNS	4	20	4	20



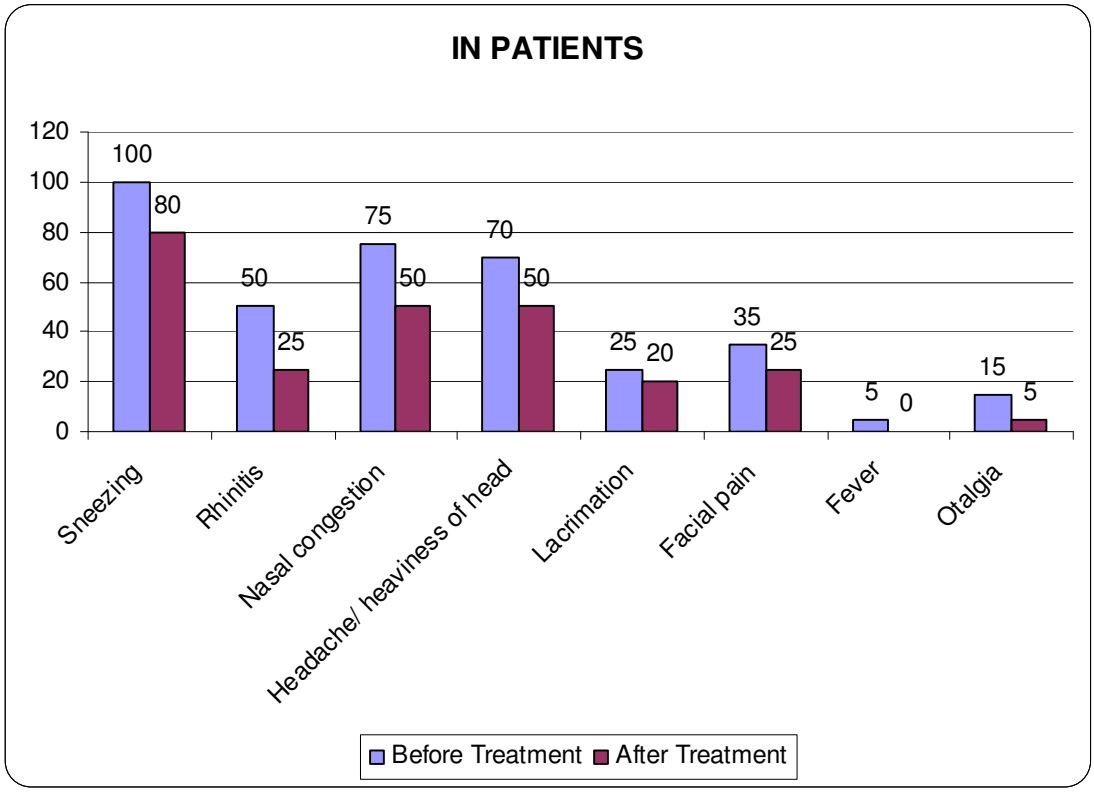
Inference: The table showed that Frontal Sinusitis was found in most of the cases.

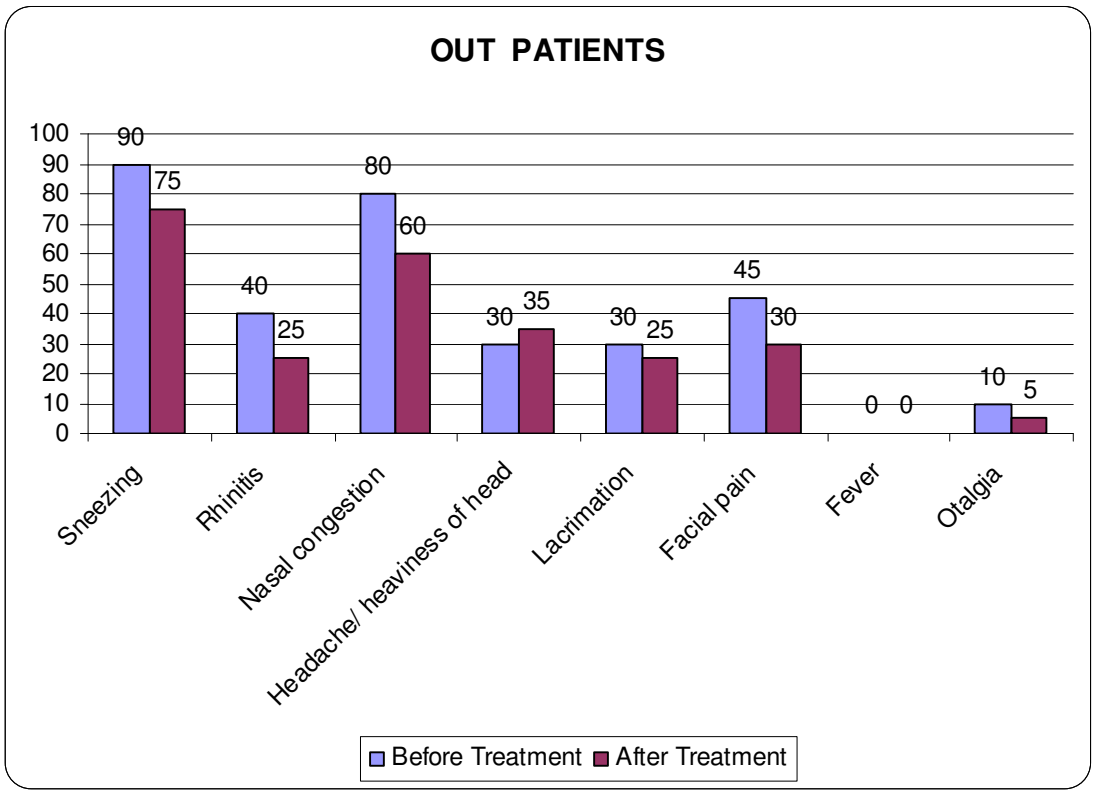
24. Assessment of Outcome

Symptoms	Out Patients				In Patients			
	BT		AT		BT		AT	
	No. of Cases	%	No. of caes	%	No. of Cases	%	No. of	%
Sneezing	20	100	16	80	18	90	15	75
Rhinitis	10	50	5	25	8	40	5	25
Nasal congestion	15	75	10	50	16	80	12	60
Headache/ heaviness of head	14	70	10	50	10	30	7	35
Lacrimation	5	25	4	20	6	30	5	25
Facial pain	7	35	5	25	9	45	6	30
Fever	1	5	-	-	-	-	-	-
Otalgia	3	15	1	5	2	10	1	5

BT – Before treatment

AT- After treatment


IN PATIENTS
120
100
80
60
40
20
0
100
80
50
25
75
50
70
50
25
20
35
25
5
0
15
5
Sneezing
Rhinitis
Nasal congestion
Headache/ heaviness of head
Lacrimation
Facial pain
Fever
Otalgia
Before Treatment
After Treatment

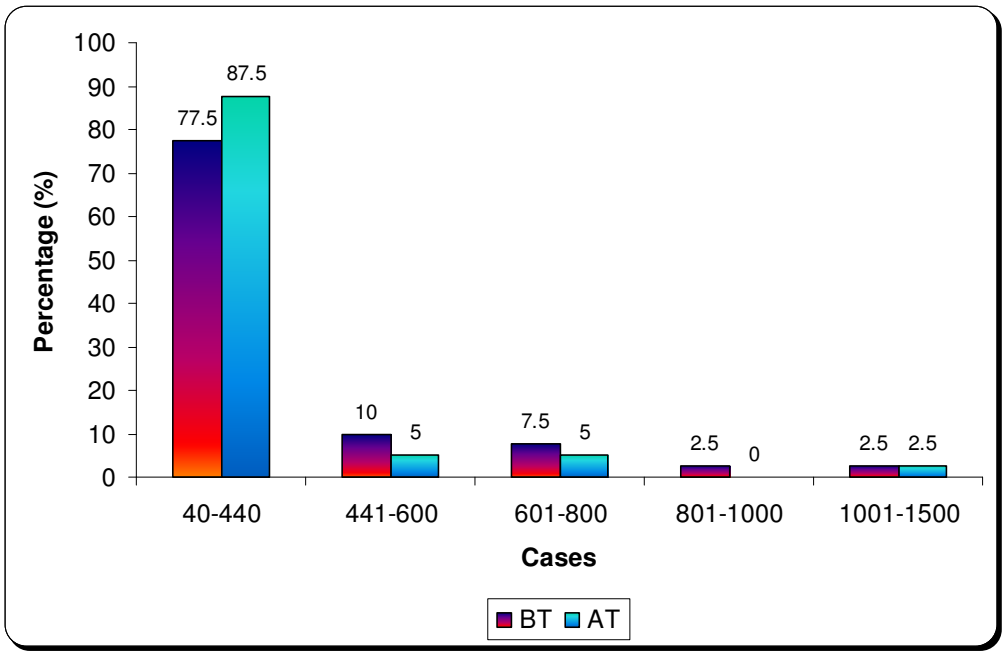

OUT PATIENTS
100
90
80
70
60
50
40
30
20
10
0
90
75
40
25
80
60
30
35
30
25
45
30
0
0
10
5
Sneezing
Rhinitis
Nasal congestion
Headache/ heaviness of head
Lacrimation
Facial pain
Fever
Otalgia
Before Treatment
After Treatment

Inference

Out of 40 patients, sneezing was relieved in 31 patients (77.5%) were relieved from sneezing, 10 patients (25%) were relieved from rhinitis, 22 patients (55%) were relieved from nasal congestion, 17 patients (42.5%) were relieved from headache, 9 patients (22.5%) were relieved from lacrimation, 11 patients (27.5%) from facial pain, and 2 patients (5%) from otalgia.

25. Absolute Eosinophil Count (AEC)

Absolute eosinophil count (cells/ µl)	No of cases		Percentage	
	BT	AT	BT	AT
40-440	31	33	77.5	82.5
441-600	4	4	20	20
601-800	3	2	15	10
801-1000	1	0	5	0
1001-1500	1	1	5	5



Inference

Before treatment

Out of 40 cases, 31 cases (77.5%) the AEC level was between 40 – 440 cells /µl, in 4 cases (20%) the AEC level was 441-600, in 3 cases (15%) AEC level was 601 – 800, in 1 case (5%) AEC level was 801-1000, in 1 case (5%) AEC level was 1001-1500.

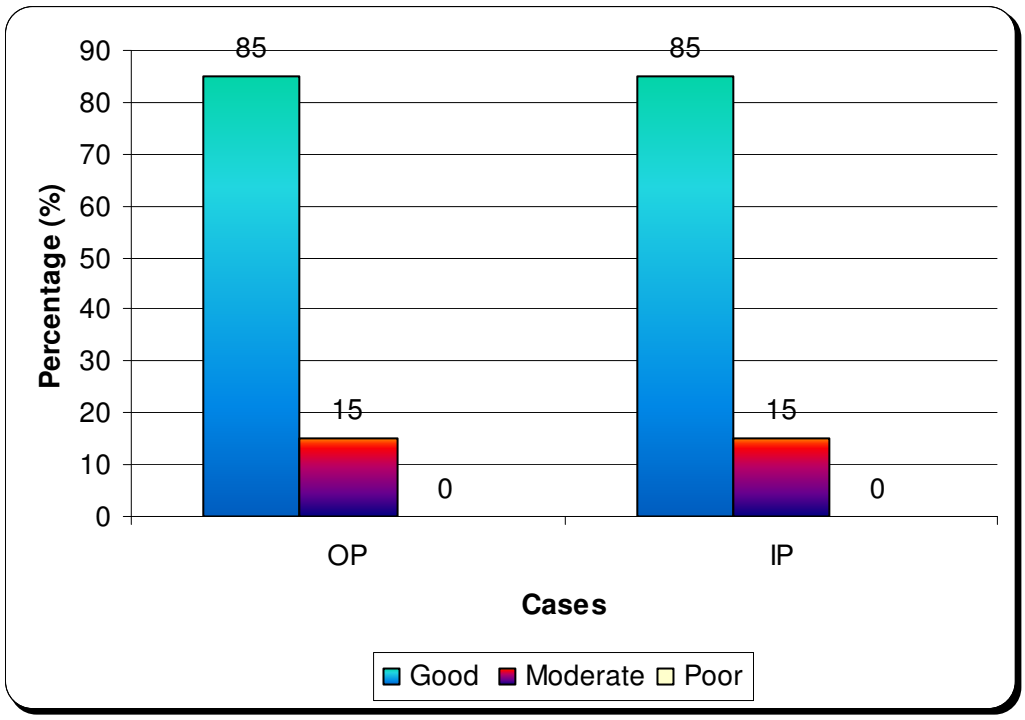
After treatment

Out of 40 cases, 33 cases (82.5%) the AEC level was between 40 – 440 cells /µl, in 4 cases (20%) the AEC level was 441-600, in 2 cases (10%) AEC level was 601 – 800, in 1 case (5%) AEC level was 1001-1500.

26. Gradation of Results:

From above all parameters the overall gradation may be as follows.

Grade	Outpatients		Inpatients	
	No.of cases	**Percentage**	**No.of cases**	**Percentage**
Good Response	17	85	17	85
Moderate Response	3	15	3	15
Poor Response	-	-	-	-



Inference: Among Inpatients and out patients

85% of cases showed good results.

15% of cases showed Moderate results.

Table - I

CASE SUMMARY OF OUT-PATIENTS

S.No.	OP. No	Name	Age	Sex	Occupation	Duration of the illness	Starting of Treatment	End of Treatment	No. of days Treated	Results
1.	11006	Abubkhan	45	M	Driver	2 Months	02.02.16	04.03.16	31	
2.	11405	Reshma	32	F	Housewife	6 Months	03.02.16	06.03.16	32	
3.	11714	Jeyasudha	33	F	Beedi Maker	6 Months	14.02.16	08.03.16	32	
4.	12076	Priya	25	F	Housewife	8 Months	05.02.16	09.03.16	33	
5.	12421	hanshi	46	F	Housewife	One Year	06.02.16	09.03.16	32	
6.	12449	Geetha	38	F	Housewife	2 Year	06.02.16	09.03.16	32	
7.	12921	Ramesh	38	M	Conductor	2 Year	08.02.16	09.03.16	30	
8.	13297	Saiskala	18	F	Student	6 Months	09.02.16	09.03.16	29	
9.	13312	Sathiyapriya	18	F	Student	18 Months	09.02.16	10.03.16	30	
10.	13375	balasubramanian	41	M	Labour	8 Months	09.02.16	10.03.16	30	
11.	14775	Parvathy	49	F	Housewife	4 Months	13.02.16	12.03.16	28	
12.	15580	Karthiga	21	F	Student	2 Years	16.02.16	17.03.16	30	
13.	15616	Chandra	50	F	Housewife	2 Months	16.02.16	17.03.16	30	
14.	16502	Radhakrishnan	50	M	Govt. Employee	3 Days	18.02.16	19.03.16	30	
15.	16503	Isakkimuthu	18	M	Labour	6 Months	18.02.16	19.03.16	30	
16.	17121	Maheswaran	25	M	Cement factory work	4 Days	20.02.16	19.03.16	28	
17.	17169	Arumugapriya	18	F	Student	15 Days	20.02.16	20.03.16	29	
18.	18120	Poovathal	43	F	Housewife	20 Days	23.02.16	22.03.16	31	
19.	18533	Vani	27	F	Beedi Maker	1 Year	24.02.16	27.03.16	32	
20.	18534	Thanikasalam	45	M	Farmer	6 Months	24.02.16	27.03.16	32	

Table - II
LABORATORY INVESTIGATIONS OF OUT-PATIENTS

S.No	OP. No	Before Treatment			After Treatment			Absolute Eosinophil Count	
		Blood Sugar mg%	Blood urea mg%	Serum Cholesterol mg%	Blood Sugar mg%	Blood urea mg%	Serum Cholesterol mg%	Before Treatment	After Treatment
1.	11006	110	30	200	120	35	190	355	222
2.	11405	90	17	172	98	20	160	133	122
3.	11714	108	20	187	107	20	180	144	250
4.	12076	85	20	120	87	25	130	144	155
5.	12421	86	20	126	87	20	140	122	222
6.	12449	82	24	140	83	23	150	368	66
7.	12921	90	30	180	95	35	170	1060	1336
8.	13297	80	20	110	88	22	120	55	244
9.	13312	116	28	250	120	30	240	122	100
10.	13375	180	20	172	170	24	182	433	520
11.	14775	79	24	160	90	20	170	133	130
12.	15580	79	20	140	80	22	140	430	510
13.	15616	116	28	244	110	30	200	368	200
14.	16502	101	34	171	80	35	170	440	380
15.	16503	85	20	170	90	22	160	225	185
16.	17121	110	30	180	95	30	190	330	280
17.	17169	89	22	116	88	22	115	410	390
18.	18120	120	24	160	95	20	170	224	180
19.	18533	95	35	190	100	30	200	436	333
20.	18534	110	24	150	98	20	170	44	

Table - III
LABORATORY INVESTIGATIONS OF OUT-PATIENTS

S. No	OP. No	BLOOD INVESTIGATION														URINE ANALYSIS					
		BEFORE TREATMENT							AFTER TREATMENT							BEFORE TREATMENT			AFTER TREATMENT		
		TC Cells/ Cumm	DC%			ESR mm hrs		Hb gm%	TC Cells / Cumm	DC%			ESR mm hrs		Hb gm%	Alb	Sug	Dep	Alb	Sug	Dep
			P	L	E	1/2 hr	1hr			P	L	E	1/2 hr	1hr							
1.	11006	9200	52	36	12	10	25	11	9300	57	36	6	10	25	11.3	Nil	Nil	NAD	Nil	Nil	NAD
2.	11405	9000	67	29	4	4	8	10.5	9000	65	35	2	2	4	10	Nil	Nil	NAD	Nil	Nil	NAD
3.	11714	9000	68	27	5	3	6	10.5	9100	68	30	2	2	4	10.5	Nil	Nil	NAD	Nil	Nil	NAD
4.	12076	9200	60	26	4	12	24	10	9100	65	35	2	4	8	10.5	Nil	Nil	1 – 2 pus cells	Nil	Nil	NAD
5.	12421	8000	67	29	4	6	12	12.5	8000	68	30	2	6	12	12	Nil	Nil	NAD	Nil	Nil	NAD
6.	12449	8800	58	28	8	26	55	12	9000	66	30	4	12	24	12	Nil	Nil	NAD	Nil	Nil	NAD
7.	12921	8000	55	40	5	2	4	10.8	8100	60	39	1	2	4	10.4	Nil	Nil	NAD	Nil	Nil	NAD
8.	13297	7800	58	36	6	8	16	11.	8000	60	36	4	4	8	11.5	Nil	Nil	NAD	Nil	Nil	NAD
9.	13312	7400	54	40	6	20	42	11.8	7300	55	42	3	10	20	11.5	Nil	Nil	NAD	Nil	Nil	NAD
10.	13375	9000	68	27	5	3	6	14	9000	67	30	3	3	6	13.5	Nil	Nil	NAD	Nil	Nil	NAD
11.	14775	8000	50	49	1	9	18	10.8	8100	63	36	1	6	15	10.9	Nil	Nil	NAD	Nil	Nil	NAD
12.	15580	8200	50	48	2	2	4	11	8300	55	44	1	2	4	11	Nil	Nil	NAD	Nil	Nil	NAD
13.	15616	7800	52	36	12	20	40	11.5	7900	65	30	5	10	20	11.0	Nil	Nil	NAD	Nil	Nil	NAD
14.	16502	7400	54	40	6	20	40	10.5	9600	58	40	4	10	20	10.5	Nil	Nil	1 – 2 pus cells	Nil	Nil	NAD
15.	16503	7900	67	25	8	10	20	10.5	7800	65	30	3	5	10	10.5	Nil	Nil	NAD	Nil	Nil	NAD
16.	17121	8000	67	29	4	6	12	9.8	8100	68	30	2	3	6	10	Nil	Nil	1 – 2 pus cells	Nil	Nil	NAD
17.	17169	9500	58	38	4	5	11	9.5	9600	60	38	2	2	4	9.8	Nil	Nil	NAD	Nil	Nil	NAD
18.	18120	8700	67	30	3	6	12	10	8800	68	30	2	3	6	10.5	Nil	Nil	NAD	Nil	Nil	NAD
19.	18533	9000	65	30	5	10	20	10.5	8900	66	32	2	5	10	11	Nil	Nil	NAD	Nil	Nil	NAD
20.	18534	8900	68	27	5	6	12	11	8800	68	30	2	3	6	11.2	Nil	Nil	NAD	Nil	Nil	NAD

Table - IV

CASE SUMMARY OF IN-PATIENTS

S.No.	IP. No	Name	Age	Sex	Occupation	Duration of the illness	Starting of Treatment	End of Treatment	No. of days Treated	Results
1.	407	Lakshmi	50	F	Beedi Maker	6 Months	16.02.16	10.03.16	23	Good
2.	1363	Thatchinamoorty	50	M	Driver	8 Months	24.05.16	11.06.16	19	Good
3.	1352	Pitchiapillai	42	M	Driver	4 Months	23.05.16	17.06.16	26	Good
4.	1377	Kaikondan	48	M	Hotel	2 Months	25.05.16	14.06.16	21	Good
5.	1364	Lakshmi	50	F	Cement Factory worker	6 Months	23.05.16	02.06.16	11	Good
6.	1397	Lakshmi	40	F	House wife	2 Months	27.05.16	30.05.16	4	Good
7.	1382	Kalyani	50	M	Chemical company	15 days	26.05.16	17.06.16	23	Good
8.	1468	Ponperumal	49	M	Labour	10 days	04.06.16	20.06.16	12	Good
9.	1471	Subbammal	52	F	Beedimaker	20 days	05.06.16	16.06.16	14	Good
10.		Maragatham	42	F	Housewife	1 year	05.06.16	18.06.16	23	Good
11.	1409	Arumugam	43	F	Labour	8 Months	28.05.16	19.06.16	12	Good
12.	1482	Ravindran	40	M	Labour	4 Months	06.06.16	17.06.16	13	Good
13.	1489	Manoranjitham	43	F	Beedi Maker	12 Days	07.06.16	19.06.16	3	Fair
14.	1516	Vallinayagam	42	M	Plumber	20 days	10.06.16	12.06.16	6	Good
15.	1529	Balkani	43	F	Labour	2 Months	12.06.16	17.06.16	4	Good
16.	1536	Nainar	53	M	Driver	10 days	14.06.16	17.06.16	2	Fair
17.	1579	Pandi	47	M	Cement Factory worker	15 days	18.06.16	19.06.16	5	Good
18.	1578	Chinamani	52	M	Farmer	10 days	18.06.16	27.06.16	10	Good
19.	1559	Rajeswari	23	F	Housewife	7 days	15.06.16	22.06.16	8	Good
20.		Arumugammal	48	F	Beedi Maker	2 Months	20.06.16	26.06.16	7	Fair

Table V
LABORATORY INVESTIGATIONS OF IN-PATIENTS

S.No	IP.No	Before Tratment			After Treatment			Absolute Eosinophil Count	
		Blood Sugar mg%	Blood urea mg%	Serum Cholesterol mg%	Blood sugar mg%	Blood urea mg%	Serum Cholesterol mg%	Before Treatment	After Treatment
1.	407	80	20	160	86	22	140	155	100
2.	1363	90	22	120	80	20	120	144	122
3.	1352	72	24	153	85	22	155	888	666
4.	1377	95	25	125	110	24	130	311	305
5.	1364	107	32	200	91	30	190	633	233
6.	1397	90	30	190	95	35	200	333	222
7.	1382	110	35	170	90	30	180	588	122
8.	1468	121	29	163	119	20	160	122	111
9.	1471	227	30	217	120	32	200	277	222
10.	1473	91	22	186	90	21	187	155	166
11.	1409	114	23	143	110	25	144	644	588
12.	1482	83	30	141	85	35	180	511	133
13.	1489	93	36	174	90	32	190	122	101
14.	1516	120	20	150	80	18	150	333	222
15.	1529	127	30	217	120	32	200	544	644
16.	1536	107	32	200	91	32	170	620	480
17.	1579	85	22	120	80	20	120	340	220
18.	1578	93	36	174	90	32	180	430	310
19.	1559	91	22	186	90	21	187	500	405
20.		100	30	190	110	35	185	140	120

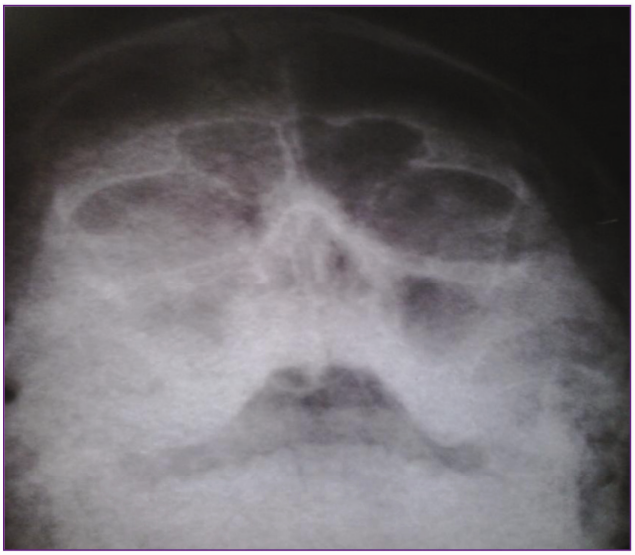
Table - VI
LABORATORY INVESTIGATIONS OF IN-PATIENTS

S. No	IP. No	BLOOD INVESTIGATION													URINE ANALYSIS					
		BEFORE TREATMENT							AFTER TREATMENT						BEFORE TREATMENT			AFTER TREATMENT		
		TC Cells/ Cumm	DC%			ESR mm hrs		Hb gm%	TC Cells / Cumm	DC%			ESR mm hrs		Hb gm %	Alb	Sug	Dep	Alb	Sug	Dep
			P	L	E	1/2 hr	1hr			P	L	E	1/2 hr	1hr							
1	211	11000	68	30	2	8	50	10.8	11000	67	30	3	10	20	10.5	Nil	Nil	3-5pus cells	Nil	Nil	NAD
2	328	7800	64	30	6	4	28	11.8	7300	67	31	2	7	14	11.5	Nil	Nil	NAD	Nil	Nil	NAD
3	343	7800	60	35	5	5	10	10.8	7400	65	37	3	5	10	10	Nil	Nil	NAD	Nil	Nil	NAD
4	542	8600	53	32	15	6	12	10.7	8500	60	40	5	3	6	10.5	Nil	Nil	NAD	Nil	Nil	NAD
5	553	7300	67	27	6	10	24	10	7200	63	32	5	2	4	10	Nil	Nil	1 – 2 epi cells	Nil	Nil	NAD
6	656	9000	60	28	12	20	40	9.7	9100	63	31	8	10	20	9.5	Nil	Nil	1-2 pus cells	Nil	Nil	NAD
7	774	8500	64	27	9	30	60	12.7	8400	64	30	6	15	30	12.5	Nil	Nil	1-2 pus cells	Nil	Nil	NAD
8	778	9000	56	34	10	60	98	10.5	8500	55	40	5	30	60	10.5	Nil	Nil	NAD	Nil	Nil	NAD
9	846	8300	68	30	2	2	4	9.5	8200	67	32	1	2	5	9.5	Nil	Nil	2-5 pus cells	Nil	Nil	NAD
10	906	540	67	30	3	24	45	12	5500	67	31	2	20	40	12	Nil	Nil	NAD	Nil	Nil	NAD
11	911	9000	65	34	1	4	8	10.5	9000	66	35	1	2	4	10	Nil	Nil	1-2 pus cells	Nil	Nil	NAD
12	969	8300	65	25	10	2	6	10	8200	65	30	5	2	4	10.5	Nil	Nil	NAD	Nil	Nil	NAD
13	995	8000	60	38	2	2	4	11	8100	64	35	1	2	4	11	Nil	Nil	NAD	Nil	Nil	NAD
14	1043	8000	55	43	2	10	20	12	7900	60	38	2	5	10	11.5	Nil	Nil	few pus cells	Nil	Nil	NAD
15	1097	8000	60	38	2	4	8	9.2	8000	65	34	1	2	4	10	Nil	Nil	NAD	Nil	Nil	NAD
16	1101	8100	54	40	6	24	48	9	8000	67	30	3	12	24	9	Nil	Nil	NAD	Nil	Nil	NAD
17	1106	9000	56	34	10	60	98	10	9100	55	40	5	30	60	10	Nil	Nil	NAD	Nil	Nil	NAD
18	1108	8600	67	28	5	2	5	12	8500	60	37	3	2	4	12	Nil	Nil	NAD	Nil	Nil	NAD
19	1215	8700	66	21	4	10	20	8.5	8800	60	35	5	5	10	9	Nil	Nil	1-2 epi cells	Nil	Nil	NAD
20	1357	8000	67	30	3	20	40	10	8100	65	33	2	10	20	10	Nil	Nil	NAD	Nil	Nil	NAD

X RAY (PNS) BEFORE TREATMENT:

Before treatment

OP. No: 13375 , Balasubramanian 41 / M

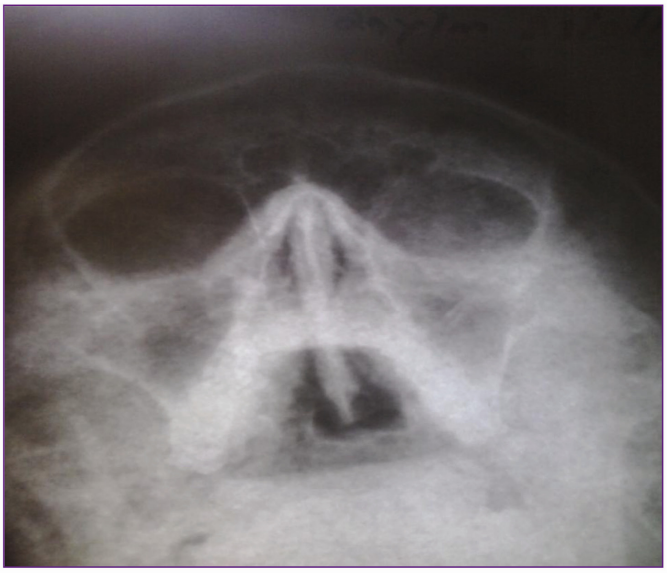


After treatment:

OP. No: 13375 , Balasubramanian 41 / M

Before treatment

OP. No: 1559 , Rajeswari 23 / F



After treatment:

OP. No: 1559 , Rajeswari 23 / F

DISCUSSION

Kapha peenisam is a disease characterised by headache, nasal block, sneezing, lacrimation, ear dishcarge, nasal itching, running nose and absence of taste. The signs and symptoms of kabha peenisam as per yugi can be correlated with sinusitis in modern science.

The aim of the study is to evaluate the therapeutic efficacy of the siddha formulation PERUNJCHIRAKA CHOORANAM in the treatment of kapha peenisam.

According to siddha system of medicine the causes of peenisam are exposure to cold atmosphere, drinking and taking bath in cold water. Regarding the etiology of sinusitis in modern medicine, it's due to hypersensitivity to a variety of allergens, temperature variations, emotional factors, environmental pollution and lowered resistance.

For the clinical study 20 patients were selected and admitted as In patients in post graduate department of Pothu maruthuvam. They were treated with the trial medicine.

In the outpatient department of pothu maruthuvam 20 patients were selected and treated with the trial drug. The results were clearly observed and recorded under the supervision of professor, Reader and lecturers. The observations are disucssed below

Distribution of cases by Gender

The prevalence of the disease was found to be higher in females (23cases, 57.5%) among 40 patients

Distribution of cases by age

The study showed that the highest incidence of kabha peenisam was between 51 – 60 years of age (22 cases, 55%).

Distribution of cases by kaalam (life span)

Out of 40 cases, 27.5 % (11 cases) were found to be in Vatha kaalam (upto 33 years) and 72.5 % (29 Cases).

Chronicity of diseases

Among 40 cases, 32.5% of cases had the duration upto 1 month and 25% of cases had the duration of disease for 2 – 6 months and 17.5% of cases had the duration of disease for 6 – 12 months. 5% of cases had the duration of disease above 18 months.

The data illustrated the highest incidence of duration of disease among 40 cases were within 1 months and for 2 – 6 months.

Distribution by Religion:

Among 40 cases 82.5% (33 cases) were Hindus, 7.5% (3 cases) were christians and 10% (4 cases) were muslims.

Distribution of cases by Gunam

Most of the patients under this analysis were predominantly of Rajo gunam assessed from interrogation and other observations (40 cases).

Distribution of cases as per Thinai (Land)

Out of 40 cases, 85% (344 cases) were from Marutha Nilam, 7.5% (3 cases) were from Neithal nilam and 7.5% (3 case were from Mullai Nilam)

Distribution of cases by paruva kaalam

Among 40 patients the occurence of the disease in Pinpanikaalam 15% (6 cases) and in Munpani Kaalam 25% (10 cases) and in Elavenil Kaalam 37.5% (15 cases), 10% (4 cases) Muthuvenil kaalam. As per siddha literature Munpanikaalam and Pinpani kaalam are the periods of kabha peenisam.

Distribution of cases by occupational status

Out of 40 cases, Housewives (10 cases) 25% were mostly affected, 10% (4 cases) were drivers and 15% (6 cases) were labour.

Chemical and dust exposure aggravates the disease.

Distribution of cases by aetiological factor

Out of 40 patients majority of them were allerrgic to dust (27.5%) and cold exposure (55%). As per the literature, dusty environment is considered to be the main predisposing factor of Kabha peenisam.

Distribution by socio economic status

Among 40 cases, 27.5% (11 cases) belonged to poor socio economic status, 62.5% (25 cases) belonged to middle class. 10% (4 cases) belonged to Rich.

This observation indicated the increased incidence of the disease in middle socio economic status.

Distribution of cases by dietary habits

Out of 40 cases, 6 cases (15%) taking vegetarian diet and 36 cases (85%) taking Non vegetarian diet.

Family history

Among 40 cases, 80% of the patients had negative family history. 20% of the patients had positive family history.

It is showed that most of the patients had negative family history.

Clinical Manifestations

Out of 40 cases, 31 cases (77.5%) had clinical symptom of nasal congestion. 38 cases (95%) had sneezing, 24 cases (65%) had headache, and 18 cases (45%) had facial pain and 18 cases (45%) had nasal discharge.

Mode of onset

The observation illustrated that the mode of onset was 50% acute as well as 50% chronic.

Derangements noted in Gnanendrium

Mooku was affected in 28 cases (70%) due to nasal block, running nose. Mei was affected in 12 cases (30%) due to headacche and faccial pain and Kan was affected in 15 cases (37.5%) due to excessive lacrimatin, burning sensation. Sevi was affected in 4 cases (10%) due to otalgia.

Derangements noted in kanmedrium

Kai was affected in 9 cases (22.5%), Kaal was affected in 7 cases (17.5%) due to pain in upper and lower limbs.

Derangements noted in Vatham

Out of 40 cases observed, Pranan was affected in 34 cases (85%) due to nasal block. Viyanan was affected in 8 patients (20%) due to pain in lower limbs. Samanan was affected in 40 cases (100%) and uthanan was affected in 27 cases (67.5%) of patients. Koorman was affected in 14 cases (35%) due to excessive lacrimation. Kirukaran was affected in 38 cases (95%) due to sneezing and Dhevathathan was affected in all 40 cases (100%) due to tiredness.

Derangements noted in pitham

Analagam was affected in 12 cases (30%). Ranjagapitham was afffected in 8 patients (20%) due to pallor and Sathagapitham was affected in 26 patients (65%).

Derangements noted in kabham

Avalambagam was affected in 40 patients (100%) of cases and Tharpagam was affected in 10 patients (25%) due to burning sensation of eyes and Sandhigam was affected in 14 patients (35%)

Derangements noted in udal kattugal

Saram was affected in all cases (100%) Seneer was affected in 9 cases (22.5%) due to pallor. Kozhuppu was affected in 10 cases (25%) Enbu was affected in 7 cases (17.5%)

Derangements noted in Envagai thervugal

Out of 40 cases observed, Vizhi was affected in 12 cases (30%) due to excessive lacrimation, Naa was affected in 8 cases (20%) due to pallor and

Mozhi was affected in 25 cases (62.5%) due to low pitched voice Sparisam was affected in 8 cases (20%).

Distribution of cases by Naadi

Among 40 cases, 23 cases (57.5%) had vatha pitha naadi and 11 cases (27.5%) had pitha kaba naadi and 4 cases (10%) had pitha vatham and 2 cases (5%) had kaba vatha naadi

Distribution of cases by Neerkuri

Manam, Edai, Nurai and Enjal were not affected in all patients Niram was affected in 8 patients (20%)

Distribution of caes by Neikuri

Among 40 patients, 21 patients (52.5%) had kaba neer and 9 patients (22.5%) had pitha neer, 5 patients (12.5%) had vatha neer and 5 patients (12.5%) had thontha neer.

Radiological examination:

Among 40 cases, 18 patients (45%) had frontal sinusitis, 17 patients (42.5%) had left maxillary sinusitis, 10 patients (25%) had right maxillary sinusits, 2 patients (5%) had ethmoid sinusitis and 8 patients (20%) had deviated nasal septum.

Outcome

After treatment with the trial medicine PERUNJCHIRAKA CHOORANAM (twice a day) for 30 days, 31 patients (77.5%) were relieved from sneezing, 10 patients (25%) were relieved from rhinitis, 22 patients (55%) were relieved from nasal congestion, 17 patients (42.5%) were relieved from

headache, 9 patients (22.5%) were relieved from lacrimation, 11 patients (27.5%) from facial pain, and 2 patients (5%) from otalgia.

Blood parameter

Out of 40 patients, 9 patients (22.5%) had elevated absolute eosionphil count (AEC) before treatment.

After treatment AEC level was normal in 35 patients (87.5%) and in 5 cases (12.5%) it was moderately reduced.

Erythrocyte sedimentation rate

Out of 40 cases, 32 cases (80%), the ESR level was normal and in 8 cases (20%) it was moderately reduced.

Gradation of Results:

Among 40 cases, 85% (34 cases) showed good result and 15% (6 cases) showed moderate result.

SUMMARY

- The aim of the study is to assess the therapeutic efficacy of trial drug 'PERUNJCHIRAKA CHOORANAM' for 'Kabha peenisam' without any adverse effects.
- The etiopathogenesis and symptoms of kabha peenisam have been correlated with that of sinusitis with evidence of literature.
- Clinical diagnosis and selection of cases was based on clinical features described in siddha maruthuvam (Pothu) text book.
- The ingredient of the drug PERUNJCHIRAKA CHOORANAM possess anti inflammatory, anti pyretic, antimicrobial and immunomodulator effect.
- The medicine chosen for treatment and management of kabha peenisam was PERUNJCHIRAKA CHOORANAM 2gm internally, twice a day, after food.
- The trial drug selection is based on its siddha pharmacological action to pacify the deranged vatham, pitham and kabam and also due to its anti-inflammatory, antipyretic, antimicrobial and immunomodulator effect of ingredients.
- 40 patients (20 In-patients and 20 out-patients) were diagnosed with kabha peenisam clinically and they were observed for clinical diagnosis, laboratory diagnosis.
- The documentation of observations made during the clinical study showed that the drug is clinically effctive.

- The Biochemical analysis the trial medicine had calcium, sulphate, chloride, starch, iron, amino acid and unstaturated compound which adds to the clinical prognosis of kabha peenisam by Perunjchiraka chooranam
- Antimicrobial activities of PERUNJCHIRAKA CHOORANAM showed that it inhibited the growth of bacterial strains against streptococcus preumoniae, staphylococcus aureus, Escherichia coli and Klebsiella pneumoniae.
- In the pharmacological analysis, the trial drug PERUNJCHIRAKA CHOORANAM had significant anti inflammatory action.
- Acute oral toxicity study

  Acute toxicity studies done in Periyar college of pharmaceutical sciences, Trichy for research as per OECD guidelines revealed the safety of the drug in oraldose it did not produce any adverse effects in animals at level of 2gm/kg body weight.

  Result:

  All of the rats feed with the food sample showed normal general behaviour, respiraory pattern, cardiovascular signs, motor activities, relfexes and normal change in skin and fur.

  Haematological parameter, biochemical, urine parameter, histo pathological examination did not show any abnormal variation.

  With these benefits PERUNJCHIRAKA CHOORANAM can be deemed as an effective drug for kabha peenisam (sinusitis).

CONCLUSION

From the present study,

- The preparation and administration of the drug is safe, affertable and highly efficacious and more acceptable.
- The cost of trial medicine is comparatively very low.
- The medicine has many properties to control the signs and symptoms of kabha peenisam.
- No adverse effects were noticed during the course of treatment.
- Toxicity study reveals that the trial drug is safe even in higher dose of 2gm/kg body weight in wistar albino rats as per OECD guidelines.

  Therefore, it is concluded that the trial drug 'PERUNJCHIRAKA CHOORANAM' can be used for the management of Kabha peenisam.

ANNEXURE – I

PROPERTIES OF TRIAL DRUG

INTERNAL MEDICINE-PERUNJCHIRAKA CHOORANAM

DRUG INGREDIENT

1. பெருஞ்சீரகம்

BOTANICAL NAME	:	Pimpinella anisum (Apiaceae)
SYNONYMS	:	Sombu, Venseeragam
ENGLISH NAME	:	Anise – seeds, Anise fruit
PART USED	:	Fruit.

Suvai : Kaarpu, Sweet

Thanmai : Hot

Pirivu : Kaarpu

Action

- Fruit or seed is stimulant
- Carminative
- Diuretic
- Expectorant and the fruit and oild are Aromatic stomachic and carminative, oil is stimulant, Expectorant like all volatile Diaphoretic and mild expectorant

பொதுக்குணம்

"யோனிநோய் குன்மம் உரூட்சைமந் தம்பொருமல்
பேனமுறு காசம் பீலிசமிரைப் - பீனஉரை
சேர்க்கின்ற வாதமுபோஞ் சீர்பெரிய சீரகத்தால்
மூக்குநோ யில்லை மொழி"

- அகத்தியர் குணவாகடம்

Constituents

- Fruit yields and essential oil which is known as the oil of anise seeds and consists of anethole or anise camphor, anise aldehyde and methychavicol

Therapeutic uses

- Uterus disorder, colic, fever indigestion, **cough,** liver disorder, **sneezing, sore throat and cold**
- This also cures flatulence in uterus. This acts as galactagogue. Decoction of the seeds is used to releive uterous disorders
- Powdered seeds give relief in stomachache, flatulence, **fever and cough**
- Oil extracted from the seeds if taken internally induces heat and cures dyspepsia, This oil eradicate intestinal colic.

PREPARATION OF TRIAL DRUG

Purification :

Remove the dust particles and stored with container

Method of Preparation:

The above prufied raw drug slightly roasted then powdered (chooranam) and stored with air tight container. Filtered with pure white cloth (Vasthirakayam).

- Ref: Gunapadam Mooligai Vaguppu Pg.no. 467, 468

Dosage:

2gm BD

Adjuvant:

Water

Indication:

Mukku noi (Peenisam)

Expiry:

3 Months from the date of preparation

Reference:

Gunapadam Mooligai Vaguppu Pg.no. 467, 468

பெருஞ்சீரகம்

பெருஞ்சீரக சூரணம்

ANNEXURE - II

BIO-CHEMICAL ANALYSIS

BIO-CHEMICAL ANALYSIS OF PERUNJCHIRAKA CHOORANAM

Preparation of the extract:

5gms of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100ml volumetric flask and then it is make up to 100ml with distilled water. This fluid is taken for analysis.

QUALITATIVE ANALYSIS

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	**TEST FOR CALCIUM** 2ml of the above prepared extract is taken in a clean test tube. To this add 2ml of 4% Ammonium oxalate solution	A white precipitate is formed	**Indicates the Presence of calcium**
2.	**TEST FOR SULPHATE** 2ml of the extract is added to 5% Barium chloride solution.	A white precipitate is formed	**Indicates the presence of sulphate**
3.	**TEST FOR CHLORIDE** The extract is treated with silver nitrate solution	A white precipitate is formed	**Indicates the presence of chloride**
4.	**TEST FOR CARBONATE** The substance is treated with concentrated Hcl.	No Brisk effervessence is formed	Absence of carbonate
5.	**TEST FOR STARCH** The extract is added with weak iodine solution	Blue colour is formed	**Indicates the presence of starch**

6.	**TEST FOR FERRIC IRON** The extract is acidified with Glacial acetic acid and potassium ferro cyanide.	No blue colour is formed	Absence of ferric iron
7.	**TEST OF FERROUS IRON** The extract is treated with concentrated Nitric acid and Ammonium thio cyanate solution	Blood red colour is formed	**Indicates the presence of ferrous iron**
8.	**TEST FOR PHOSPHATE** The extract is treated with Ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate
9.	**TEST FOR ALBUMIN** The extract is treated with Esbach's reagent	No Yellow precipitate is formed	Absence of Albumin
10.	**TEST FOR TANNIC ACID** The extract is treated with ferric chloride.	No Blue black precipitate is formed	Absence of tannic acid
11.	**TEST FOR UNSATURATION** Potassium permanganate solution is added to the extract	It gets decolourised	**Indicates the presence of unsaturated compound**
12.	**TEST FOR THE REDUCING SUGAR** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and add 8-10 drops of the extract and again boil it for 2 mts.	No colour change occurs.	Absence of Reducing sugar

13.	**TEST FOR AMINO ACID** One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninnhydrin is sprayed over the same and dried it well.	Violet colour is formed	**Indicates the presence of Amino acid**
14.	**TEST FOR ZINC** The extract is treated with Potassium Ferrocyanide.	No white precipitate is formed	Absence of Zinc.

Inference:

The extract prepared from the given sample **Perunjchiraka chooranam** contains calcium, sulphate, chloride, starch, iron, amino acid, unsaturated compound. Biochemical Analysis report was given by **Mrs. N.Nagaprema, M.Sc., H.O.D, Bio Chemical Department, Government Siddha Medical College, Palayamkottai.**

ANNEXURE - III

ANTI – MICROBIAL STUDY OF PERUNJCHIRAKA CHOORANAM BY KIRBY – BAUER METHED

AIM

To determine the Antimicrobial activity of PERUNJCHIRAKA CHOORANAM.

COMPONENTS OF MULLER HINTON AGAR MEDIUM:

Beef Extract	:	300 gms/lit
Agar	:	17 gms/lit
Starch	:	1.5 gms/lit
Casein hydroxylate	:	17.5 gms/lit
Distilled water	:	1000 ml
PH	:	7.6

PROCEDURE

The method of antimicrobial activity study is by Diffusion Method.

Antibiotic discs are prepared with known concentration of antibiotic are placed on agar plates that has been inoculated with the known pathogenic Micro organism. The antibiotic diffuses through the agar producing an antibiotic concentration. Gradient antimicrobial susceptibility is proportional to the diameter of the inhibitory zone around the disc. If the micro organism which grows upto the edge of the disc are resistant to the anti microbial agent.

The recommended medium in this method is Muller Hinton Agar; its PH should be between 7.2 – 7.6 and should be poured to uniform thickness of 4mm in the petri plate (25ml)

Methodology:

Muller Hinton Agar plates are prepared and Streptococcus pneumonia, Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae are inoculated separately.

The prepared discs of PERUNJCHIRAKA CHOORANAM are placed over the incubated plate using sterile forceps and incubated for 24 hours at 37°

celcius. The plates after 24 hours incubation are observed for the zone of inhibition.

Result:

S.NO	Test Drug	Organism (culture)	Zone size		
			Control (mm)	Test (mm)	Susceptibility
1.	PERUNJCHIRAKA CHOORANAM	Streptococcus pneumoniae	14	13	Moderate sensitive
2.		Staphylococcus aureus	20	17	Sensitive
3.		Escerichia coli	20	17	Sensitive
4.		Klebsiella pneumoniae	20	19	Sensitive

RESULT

PERUNJCHIRAKA CHOORANAM is Sensitive to Staphylococcus aureus, E coli, Klebsiella pneumoniae and Moderately sensitive to Streptococcus pneumoniae.

ANNEXURE - IV
PHARMACOLOGICAL STUDY FOR PERUNJCHIRAKA CHOORANAM

ACUTE TOXICITY STUDY

Acute oral toxicity refers to those adverse effects occurring following oral administration of a single dose of a single dose of a substance or multiple doses given within 24 hours. Acute toxic class method (OECD guidelines 423, (2000) was followed to arrive at the maximum safety dose of the drug extracts. Three Wistar strain female albino rats (8-12 weeks old, 180-200g body weight) were used in each group. Single dose (2g/kg) of the *Perunjchiraka chooranam* was orally administered to overnight fasted (food but not water withheld) animas while control animals received the vehicle (0.3%w/v CMC). Animals were observed individually after dosing at least once during the first 4 hrs and daily thereafter, for a total of 14days. Body weights of the animals were recorded. The other observations include changes for skin, fur, eyes and mucous membranes, respiratory, circulatory and autonomic and central nervous system and somatomotor activity and behavior pattern. At the end of 14 days, all animals were subjected to gross necropsy

Statistics

Data are expressed as mean ± SEM; data analysed by one way ANOVA followed by Dunnet's multiple range tests to determine the significance of the difference between the control group and rats treated with test compounds.

* Values were considered significant at $P < 0.5$.

Results

Acute toxicity study

All of the rats fed with the food sample showed normal general behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes and normal change in skin and fur.

Table - 2 Hematological values of *Per unjchiraka chooranam* in the acute toxicity study

S.No	Parameter	Control	Sample 2g/kg
1	White blood cells (xlOV)	9.36±0.54	9.14 ±0.93
2	Hemoglobin (g/dl)	11.50±0.26	12.57 ±1.42
3	Mean corpuscular volume	60.45±2.3	59.34 ±0.34
4	Mean corpuscular hemoglobin cone, (g/dl)	34.56±0.86	30.21± 1.39
5	Platelet (xlOVul)	5.60±0.52	4.98 ±0.60
6	Red blood cell (xlOV)	3.87±0.24	2.98 ±0.58

Values are expresses as Mean ± S.E.M.

All groups were treated with oral dose of 2g/kg body weight

No significant different from normal control

Table - 3

Blood chemical values of food sample in the acute toxicity study

S.No	Parameter	Control	Sample 2g/kg
1	Glucose (mg/dl)	148.75±3.96	143.83±2.01
2	BUN(mg/dl)	34.26±1.23	40.09±0.21
3	Creatinine(mg/dl)	0.46±0.06	0.36±0.14
4	Total protein (g/dl)	5.48±0.23	4.98±1.25
5	Albumin (g/dl)	3.49±0.62	3.62±0.19
6	Total bilirubin (mg/dl)	0.26±0.02	0.39±0.10
7	AST (u/1)	141.5±3.76	138.25±2.43
8	ALT (u/1)	86.36±1.75	78.37± 0.25
9	ALP (u/1)	75.57±2.16	71.06±0.26

Values are expresses as Mean ± S.E.M.

All groups were treated with oral dose of 2g/kg body weight

No significant different from normal control

DISCUSSION AND CONCLUSION

In acute toxicity study for 14 days, at a dose of 2g/kg of *Perunjchiraka chooranam* sample were chosen for the experiment. In the aspect of general behaviours, the rats treated with food sample at a single dose had no signs of behavior changes and toxic signs. The treated groups revealed no significant differences in body weight gain. The increase in body weight may have resulted from physiological changes in rats such as metabolism, food and water intake. However, the result from animal health monitoring in the entire period of 14days showed no sign of morbidity and diseases.

The albino Wistar rats were healthy as shown by the normal appearance of general behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes and normal change, in skin fur.

With regards to hematological values, most of values in treated groups were normal in comparison with the control group. Significantly, some values were different from those of the control group such as RBC, MCV, MCHC, and platelet. However, such values are within the normal ranges. These variations may have resulted from variation among animal groups (Feldman et al., 2000) (Inala et al., 2002). Therefore, these results suggest that the test drug did not cause hematological or immunological defects in rats.

Furthermore, blood chemical examination was performed in order to evaluate any toxic effects on liver. In this study, the levels of these blood chemical values were minor changes and remained within the normal range (Casley and King, 1980) (Levine, 1995) (Angkhasirisap et al., 2002).

In conclusion, *Perunjchiraka chooranam* sample given orally to Wistar rats did not produce toxicities.

ANTI-INFLAMMATORY ACTIVITY

Anti-inflammatory activity of *Perunjchiraka chooranam* against Carrageenan induced pawedema in rats

The anti-inflammatory activities *of Perunjchiraka chooranam* at a dose of lOOmg/kg and 200mg/kg body weight were evaluated using Carrageenan induced paw edema method. The inflammation was readily produced in the form of edema with the help of the irritant such as carrageenan. Carrageenan is a sulphated polysaccharide obtained from sea weed (Rhodophyceae) and when injected cause the release of prostaglandins by the way it produces inflammation and edema.

Requirements

Animal: Albino rat (180 - 200g)

Drugs and chemicals: Diclofenac sodium (standard),

carrageenan (1%), *Perunjchiraka chooranam*

Digital plethysmometer UGO Basile (Italy) **Method**

The animals were divided into 4 groups each having six animals **Treatment protocol**

Group-1: Treated as normal control received lOml/kg of normal saline through orally

Group- 2: Treated as standard control received lOmg/kg of diclofenac sodium through orally

Group- 3: Treated as treatment control received lOOmg/kg of *Perunjchiraka chooranam* with 2 ml of sterile water through orally

Group- 4: Treated as treatment control received 200mg/kg *of Perunjchiraka chooranam* with 2 ml of sterile water administered through orally

A freshly prepared suspension of carrageenan (1% w/v, 0.1ml) was injected to the plantar region of left hind paw of each rat. One group was kept as control and the animals of the other groups were pretreated with *Perunjchiraka chooranam* given through orally 60 min before the carrageenan treatment. The paw volumes of the test compounds, standard and control groups were measured at 60, 120, 180 minutes of carrageenan treatment with the help of Digital plethysmometer UGO Basile (Italy). Mean increase in paw volume was measured and the percentage of inhibition was calculated.

% anti-inflammatory activity = (Vc - Vt/Vc) x 100

Where Vt is mean increase in paw volume in rats treated with test compounds

Vc is mean increase in paw volume in control group of rats

Statistics

Data are expressed as mean ± SEM; data analysed by one way ANOVA followed by Dunnet's multiple range tests to determine the significance of the difference between the control group and rats treated with test compounds.

* Values were considered significant at P < 0.01.

ANTI - INFLAMMATORY ACTIVITY

Anti-inflammatory activity of *Perunjchiraka chooranam* against Carrageenan induced paw edema in rats

Treatment	**Dose (mg/kg)**	**Paw volume(ml) as measured at 3**	**Percentage inhibition of paw**
Group I Normal saline	5 ml/kg orally	4.95 ± 0.76	
Group II Standard	lOmg/kg Diclofenac sodium through orally	1.31 ±0.05	59.05**
Group III *Perunjchiraka chooranam*	lOOmg/kg administered through orally	2.95 ± 0.35	51.38**
Group IV *Perunjchiraka chooranam*	200mg/kg administered through orally	2.95 ± 0.50	58.10**

Values are expressed as mean ± SEM

Values are analyzed by one way AN OVA followed by Dunnet's multiple range tests, to determine the significance of the difference between the control group and rats treated with the test compounds.

** Values were considered significant at P < 0.01.

Results

Perunjchiraka chooranam at a dose of 100 and 200mg/kg were tested for their anti-inflammatory activity by using carrageenan induced rat paw edema method and the results are tabulated in table. The results reveals that both doses of ***Perunjchiraka chooranam*** 100 and 200mg/kg possess significant anti-inflammatory activity when compared to control group at p<0.01.

ANTIPYRETIC ACTIVITY

Male rat weighing 200-250g were injected subcutaneously aqueous suspension of dried brewer's yeast (12%, lml/lOOg body weight). Rats developing 1°C or more rise in rectal temperature 18h after injection were treated with 5% gum acacia p.o. and served as control groupl. Group 2&3 received the *Perunjchiraka chooranam* (lOOmg/kg & 200mg/kg) respectively. Group 4 was treated with paracetamol (25mg/kg) which served as the standard reference drug. Temperature was recorded at time intervals of 1, 2, 3 and 4 hours. The decrease in the rectal temperature when compared with the control is taken as the index of antipyretic activity.

Effect of *Perunjchiraka chooranam* on Brewer's yeast induced pyrexia in rats

s. No	Treatment	Dose	Normal Temperature°C	Temperature 18hrs after yeast induced pyrexia	Temperature after treatment with extract (°C)			
					lh	2h	3h	4h '
1	Control	—	37.2 ± 0.04	39.0 ± 0.02	39.2 ± 0.04	39.2 ± 0.05	39.6 ± 0.05	39.4* ± 0.05
2	*Perunjchiraka chooranam*	lOOmg/kg	37.3 ± 0.08	38.6 ± 0.08	38.0 ± 0.16	38.4 ± 0.05	38.1 ± 0.11	38.0* ± 0.08
3	*Perunjchiraka chooranam*	200mg/kg	37.2 ± 0.07	39.2 ± 0.12	38.6 ± 0.19	39.4 ± 0.07	38.0 ± 0.07	37.8* ± 0.11
4	Paracetamol	25mg/kg	37.6 ± 0.24	39.4 ± 0.06	38.2 ± 0.4	37.4 ± 0..28	38.0 ± 0.11	37.7* ± 0.17

N=6 values are mean±S.E.

*p<0.01 Vs Control

ANNEXURE - V

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL, TIRUNELVELI

DEPARTMENT OF MARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON "KABHA PEENISAM" (SINUSITIS) AND THE DRUG OF CHOICE IS "PERUNJCHIRAKA CHOORANAM " (internal)

FORM I SCREENING & SELECTION PROFORMA

REG NO: 321211003 /2014-15

1. STUDY NO_____ **2 OP /IP NO:_____**

3.NAME :_____ 4. AGE/SEX_____

5.RELIGION : H / C / M / O **6.OCCUPATION / INCOME : _____**

INCLUSION CRITERIA

* **Age 18 to 60**yrs
* Sex :Male/FEMALE
* Facial pain, purulent nasal discharge, nasal block, headache/heaviness of head, sneezing, fever, tooth pain, if any one or two symptoms.
  Yes/No
* Patient willing to undergo lab investigations Yes/No
* Patient willingness for consent to include in the trial
  Yes/No
* Patient willingness for radiological investigation(x ray of para nasal sinuses).

EXCLUSION CRITERIA

- Bronchial asthma,
- Tuberculosis,
- Heart disease,

- Epistaxis
- Fracture and tumour of nose
- Tuberculosis
- Hypothyroidism
- Paediatric patient less than 13 years
- Patient with anyother severe illness
- Chronic obstructive pulmonary disease,
- Renal disease.

ADMITTED TO TRAIL: YES NO If Yes Serial NO:

☐ ☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

☐

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON KABHAPEENISAM (SINUSITIS) WITH PERUNJCHIRAKA CHOORANAM

FORM II

HISTORY PROFORMA ON ENROLLMENT

1. S.No : _____ 2. OP/IP No:_____

3. Name: _____ 4. Gender: Male ☐ Female ☐

5. Age (years): _____ DOB ☐☐ ☐☐ ☐☐☐☐

Date Month Year

6. Address: ----------

---

7. A. Occupation: ---------- B. Nature of work----------

8. Educational Status: A) Illiterate ☐ B) Literate ☐

9. Height: --------- cms 10.Weight:----------kg

11. Complaints and Duration:

12. History of past illness:

13. Habit of

A) Smoking : 1. Yes ☐ duration ___years; Number - _____ 2. No ☐

Past H/O chronic smoking:

B) Alcoholism: 1. Yes ☐ duration ____ years; Quantity- ____ ml 2. No ☐

C) Tobacco chewing: 1. Yes ☐ duration ___years 2.No ☐

D) Betel chewing : 1. Yes ☐ duration _____ years 2.No ☐

14. Diet: A.Pure vegetarian ☐ B.Non-vegetarian ☐

15. Drug history: Had the patient been treated before with allopathy drug?

1. Yes ☐ 2. No ☐

16. Marital status**:** 1.Married ☐ 2.Unmarried ☐

17. Family history:

Whether this problem runs in family? 1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s)_____

18. Menstrual history: .....

19. Bowel habits & micturition: Normal ☐ Abnormal ☐

20. Psychological state: Normal ☐ Anxiety ☐ Depression ☐

Date :

Station :

Signature of Investigator

Signature of Reader/Lecturer Signature of the HOD

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL, TIRUNELVELI

DEPARTMENT OF POTHU MARUTHUVAM

FORM - III

PRE CLINICAL AND CLINICAL STUDY ON "KABHA PEENISAM" (SINUSITIS) AND THE DRUG OF CHOICE IS "PERUNJCHIRAKA CHOORANAM" (internal)

1. STUDY NO

2. OP/IP NO **REG** NO: 321211003 /2014-15

3.NAME

4.GENDER / MALE /FEMALE

5. DATE OF ASSESSMENT

Initial (0^{th} day) ☐ 7^{th} day ☐ 13^{th} day ☐ 19^{th} day ☐ 25^{th} day ☐

SIDDHA SYSTEM OF EXAMINATION

ENNVAGAI THERVU: [EIGHT-FOLD EXAMINATION]

I. NAADI: [PULSE PERCEPTION]

Naadi	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day	Naadi	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Vali						Iyya vali					
Azhal						Vali Iyyam					
Iyyam						Azhal Iyyam					
Vali azhal						Iyya Azhal					
Azhal vali											

I. NAA: [TONGUE]

	0th Day	**7th Day**	**12th Day**	**19th Day**	**25th Day**
Colour	Dark / Yellow/ Red / Pale/ Normal	Dark / Yellow/ Red / Pale/ Normal	Dark / Yellow/ Red / Pale/ Normal	Dark / Yellow/ Red / Pale/ Normal	Dark / Yellow/ Red / Pale/ Normal
Taste	Sweet/ Bitter / Sour Pungent/ None	Sweet/ Bitter / Sour Pungent/ None	Sweet/ Bitter / Sour Pungent/ None	Sweet/ Bitter / Sour Pungent/ None	Sweet/ Bitter / Sour Pungent/ None
Coating	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Fissure	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Saliva	Normal/ Increased/ Decreased	Normal/ Increased Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased
Dryness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Glossitis	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
Baldness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

III.NIRAM: [COMPLEXION]

0^{th} Day	7th day	13^{th} Day	19^{th} Day	25^{nd} Day
Dark/ Yellowtinted/ Wheatish brown/ Pale	Dark/ Yellowtinted/ Wheatish brown/ Pale	Dark/ Yellowtinted/ Wheatish brown/ Pale	Dark/ Yellowtinted/ Wheatish brown/ Pale	Dark/ Yellowtinted/ Wheatish brown/ Pale

IV.MOZHI: [VOICE]

0^{th} Day	7th day	13^{th} Day	19^{th} Day	25^{nd} Day
Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Lowpitched

V.VIZHI: [EYES] (Lower palpabrel conjunctiva)

0th Day	7th day	13th Day	19th Day	25nd Day
Yellow Red / Pale/Normal	Yellow Red/ Pale/Normal	Yellow Red/ Pale/Normal	Yellow Red/ Pale/Normal	Yellow Red/ Pale/Normal

VI. MALAM; [BOWEL HABITS / STOOLS]

	0th Day	7th Day	13 th Day	19nd Day	25th day
Colour	Dark/ Yellow/ Pale/Others	Dark/ Yellow/ Pale/Others	Dark/ Yellow Pale/Others	Dark/ Yellow/ Pale/Others	Dark/ Yellow/ Pale/Others
Consistency	Solid/ Semisolid Watery	Solid/ Semisolid Watery	Solid/ Semisolid Watery	Solid/ Semisolid Watery	Solid/ Semisolid Watery
Stool bulk	Normal/ Reduced	Normal /Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced
Constipation	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Diarrhoea	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

VII. URINE EXAMINATION:

NEER KURI	**0th Day**	**7th Day**	**13 th Day**	**19nd Day**	**25 th day**
Niram [Colour]	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish / Straw coloured/ Crystal clear
Manam [Odour]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Nurai [Froth]	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased
Edai [Sp.gra]	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced
Enjal [Deposits]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Volume	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced

NEIKURI	**0th day**	**7th day**	**13th day**	**19th day**	**25th day**
Serpentine fashion					
Annular/Ringed fashion					
Pearl beaded fashion					
Mixed fashion					
Other fashion					

VIII. SPARISAM: [PALPATORY PERCEPTION]

0th Day	7th Day	13th Day	19th Day	25nd Day
Warmth/ Cold/ Normal/ Sweat	Warmth/ Cold/ Normal/ Sweat	Warmth/ Cold/ Normal/ Sweat	Warmth/ Cold/ Normal/ Sweat	Warmth/ Cold/ Normal/ Sweat

2.THEGI: [TYPE OF BODY CONSTITUTION]

Vatham predominant		Kabam predominant	
Pitham predominant		Thondha udal	

3.NILAM: [LAND WHERE PATIENT LIVED MOST]

Kurinji ☐ Mullai ☐ Marutham ☐ Neithal ☐ Palai ☐

(Hilly terrain) (Plains) (Coastal belt) (Aridregions) (Forestrange)

4.KAALAM

Kaarkalam	☐	Pinpanikalam	☐
Koothirkalam	☐	Ilavenil	☐
Munpanikalam	☐	Muthuvenil	☐

5. GUNAM

Sathuvam ☐ Rasatham ☐ Thamasam ☐

6.,IMPORIGAL (SENSORY ORGANS)

	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Mei (Skin)					
Vaai (Buccal Cavity)					
Kann (Eye)					
Mooku (Nose)					
Sevi(Ear)					

7.KANMENTHIRIYAM (MOTOR ORGANS)

Kanmenthiriyam	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Kai (upper limb)					
Kaal (lower limbs)					
Vaai (buccal cavity)					
Eruvai (excretory organs)					
Karuvai (reproductive organs)					

8..KOSANGAL(Sheath)

Kosangal	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Annamaya Kosam					
Pranamaya kosam					
Manomaya kosam					
Vignanamaya kosam					
Ananthamaya kosam					

9. MUKKUTRAM:[AFFECTION OF THREE HUMORS]

A)VATHAM:

Vatham	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Praanan					
Abaanan					
Samaanan					
Udhaanan					
Viyaanan					
Naagan					
Koorman					
Kirukaran					
Devathathan					
Dhananjeyan					

B) PITHAM:

Pitham	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Analapitham					
Prasakam					
Ranjakam					
Aalosakam					
Saathakam					

C) KABAM:

Kabam	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Avalambagam					
Kilethagam					
Pothagam					
Tharpagam					
Santhigam					

10. SEVEN DHATHUS: (7 SOMATIC COMPONENTS)

Udal thathukkal	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Saaram[Chyme]					
Senneer[Blood]					
Oon[Muscle]					
Kozhuppu[Fat]					
Enbu[Bones]					
Moolai [Bonemarrow]					
Sukkilam/Suronitham[Genital discharges]					

11. SYSTEMIC EXAMINATION:

Systemic examination	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Locomotor system					
Cardio Vascular System					
Respiratory system					
Gastro Intestinal system					
Central Nervous System					
Urogenital system					
Endocrine System					

12. GENERAL EXAMINATION:

General Examination:	0^{th} day	7^{th} day	13^{th} day	19^{th} day	25^{th} day
Height (cms)					
Weight (kg)					
Temperature(°F)					
Pulse rate (per min)					
Heart rate (per min)					
Respiratoryrate(per min)					
Blood pressure(mm/Hg)					
Pallor					
Jaundice					
Cyanosis					
Lymphadenopathy					
Pedal edema					
Clubbing					
Jugular venous pulsation					

13. CLINICAL SYMPTOMS

S.no	CLINICAL SYMPTOMS	0 th day	7th day	13th day	19th day	25th day
1	Nasal purulent					
2	Headache/Heaviness of head					
3	Facial pain					
4	Nasal block					
5	Sneezing					
6	Tooth ache					

Date :

Station:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT.
DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND CLINICAL TRIAL ON
KABHAPEENISAM (SINUSITS) WITH
PERUNJCHIRAKA CHOORANAM

FORM IV

LABORATORY PARAMETERS – CHART

1. S.No : _____ 2. OPD/ IPD No : _____

3. Bed No : _____ 4. Name : _____

5. Age : _____ Years 5. Gender : Male - ☐ Female - ☐

INVESTIGATIONS:

I.BLOOD

S.No		**NORMAL VALUES**	**BEFORE TREATMENT**	**AFTER TREATMENT**
1.	TC (million/ cu.mm)	Male - 4.30 – 5.60 Female - 4.00 – 5.20		
2.	DC	3.54 – 9.06 $\times 10^3$ /mm^3		
	Neutrophils	40 – 70%		
	Lymphocytes	20 – 50%		
	Monocytes	4 – 8 %		
	Eosinophils	0 – 6 %		
	Basophils	0 – 2%		
3.	ESR	Male – 0 – 15 mm/hr Female – 0 – 20 mm/hr		
	½hr			

	1 hr			
4.	Haemoglobin	Male - 13.3 – 16.2 g/dL Female – 12.0 – 15.8 g/Dl		
5.	Blood sugar (F/R/PP)	Fasting – 75 – 110mg/dL Random – 80 – 170mg/dL		
6.	Blood urea	20 – 40 mg/Dl		
7.	Serum creatinine	Male - 0.6 – 1.2 ng/mL Female – 0.5 – 0.9 ng/mL		
8.	Serum cholesterol	< 200 Desirable 200 – 239 Borderline high ≥ 240 High		

II. URINE:

Albumin -

Sugar -

Deposits -

III. RADIOLOGICAL INVESTIGATION:

Skull X ray –PNS view

Date :

Station :

Signature of Investigator Signature of the HOD

Signature of Reader/ Lecturer

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRE CLINICAL AND CLINICAL TRIAL ON

KABHAPEENISAM (SINUSITIS) WITH

PERUNJCHIRAKA CHOORANAM

FORM V

CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date..... signature.....

Name.....

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safe guard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I exercising my free power of choice, hereby give my consent to be included. As a subject in the clinical trial of PERUNJCHIRAKA CHOORANAM of KABHAPEENISAM (sinusitis).

Date..... signature.....

Place..... name.....

Signature of witness.....

Name.....

Relationship.....

அரசினர் சித்த மருத்துவக் கல்லூரி மற்றும் மருத்துவமனை

பாளையங்கோட்டை

பட்டமேற்படிப்பு பொது மருத்துவத்துறை

‘பெருஞ்சீரக சூரணம்’’ இவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வு ஒப்புதல் படிவம் ஆய்வாளரால் சான்றளிக்கப்பட்டது.

நான் இந்த ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி : கையொப்பம்:

இடம் : பெயர்:

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறையைப் பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வு செய்யும் உரிமையைக் கொண்டு உதிரவாத சுரோணிதம் என்னும் நோய்க்கான பெருஞ்சீரக சூரணம் ஆகியவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி : கையொப்பம்:

இடம் : பெயர் :

சாட்சிக்காரர் கையொப்பம்:

பெயர் :

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT
DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON
KABHAPEENISAM (SINUSITIS) WITH
PERUNJCHIRAKA CHOORANAM

FORM VI
WITHDRAWAL FORM

Name: _____ OPD/ IPD number: _____

Age : _____ Sex : _____

Date of trial commencement: _____

Date of withdrawal from trial: _____

Reasons for withdrawal:

- Long absence at reporting : Yes ☐ No ☐
- Irregular treatment : Yes ☐ No ☐
- Shift of locality : Yes ☐ No ☐
- Increase in severity of symptoms : Yes ☐ No ☐
- Development of severe adverse drug reactions : Yes ☐ No ☐

Date :

Station :

Signature of Investigator Signature of the HOD

Signature of Reader/ Lecturer

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRE CLINICAL AND CLINICAL TRIAL ON

KABHAPEENISAM (SINUSITIS) WITH

PERUNJCHIRAKA CHOORANAM

FORM VII

PATIENT INFORMATION SHEET

- Sinusitis is the inflammation of paranasal sinuses.
- It may be due to infection, allergies and immune disorder.
- It may be due to exposure to cold air tobacco smoke, dust, acrid fumes.
- It may get aggravated in emotional stress.
- Many herbal and mineral preparations are available to treat sinusitis.
- The trial drug is prepared at the P.G.Gunapadam lab of government siddha medical college and hospital, Palayamkottai, under the direct supervision of teaching faculties of P.G.Pothu Maruthuvam and Gunapadam.

DETAILS OF THE TRIAL DRUG

PERUNJCHIRAKA CHOORANAM

DOSAGE: 2gm, two times after food

DURATION: 30 days

- Patients are advised to avoid betel chewing, tobacco and smoking.
- Patients are advised to avoid exposure to allergens and cold climate.

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT
DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON KABHAPEENISAM (SINUSITIS) WITH PERUNJCHIRAKA CHOORANAM

FORM VIII
ADVERSE DRUG REACTION FORM

Name: _____ OPD/ IPD No : _____

Age: _____ Sex: _____

Date of trial commencement: _____

Date of withdrawal from trial: _____

Drug, dosage, route of administration: **PERUNJCHIRAKA CHOORANAM 2gm** (Internal) two times a day after food.

Laboratory findings:

_____

Concomitant drug :

_____

Description of adverse reaction:

_____

Management of adverse drug reaction :

_____

Adjustment of dose of drug if any :

_____

Patient outcome :

_____

Date :

Station :

Signature of Investigator Signature of the HOD

Signature of Reader/ Lecturer

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

DEPARTMENT OF POTHU MARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON "KABHA PEENISAM " (SINUSITIS) AND THE DRUG OF CHOICE IS PANCHAKOOLA KRITHAM "(Internal).

FORM IX (DRUG COMPLIANCE FORM) VISIT I

S. NO:_____ OPD/ IPD NO:_____ REG NO: 321211003/2014-15

NAME:_____ AGE/SEX :_____

Name of the drug : **PERUNJCHIRAKA CHOORANAM** (internal).

Drugs issued: (Nos) Drugs issued: (Nos)

Drugs returned:(Nos) Drugs returned: (Nos)

S.NO	DATE	DRUG TAKEN TIME			
		MORNING/TIME		EVENING/TIME	
Day 1					
Day 2					
Day 3					
Day 4					
Day 5					
Day 6					
Day 7					
Day 8					
Day 9					
Day 10					
Day 11					
Day 12					

Date :

Station:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL, PALAYAMKOTTAI

DEPARTMENT OF POTHUMARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON "KABHA PEENISAM" (SINUSITIS) AND THE DRUG OF CHOICE IS "PERUNJCHIRAKA CHOORANAM (internal).

FORM IX (DRUG COMPLIANCE FORM)

S. NO:_____ OPD/ IPD NO:_____ REG NO: 32121103/2014-15

NAME:_____ AGE_____

Name of the drug : **PERUNJCHIRAKA CHOORANAM(internal) .**

Drugs issued: (Nos) Drugs issued: (Nos)

Drugs returned:(Nos) Drugs returned: (Nos)

DAYS	DATE	DRUG TAKEN TIME			
		MORNING/TIME		EVENING/TIME	
Day 13					
Day 14					
Day 15					
Day 16					
Day 17					
Day 18					
Day 19					
Day 20					
Day 21					
Day 22					
Day 23					
Day 24					

Date :

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

BIBLIOGRAPHY

- C.Kannuswamy pilai,Kannuswamy parambarai vaithiyam,pg no:245
- K.N.Kupusamy mudaliar, siddha maruthuvam[pothu] 7th edition pg no:205
- Dr.K.S.Uthamarayan, Siddhar aruvai maruthuvam ,4th edition
- C.Kannuswamy pilai,Sikicha ratna deepam,edition 2007,pgno:28
- Agathiyar Mani 4000 Ennum Vaithiya cinthamani venba -Part II
- S.P.Ramachandran ,Yugi vaithiya cinthamaani
- Dr.M.Shanmugavelu,Noi nadal noi muthal nadal part 1&2
- S.Vengatrajan ,Agathiyar 2000 pg.no.46
- T.V.Sambasivam pillai muligai agarathy vol-5
- K.Vasuthava sastri,DR.S.Venkatrajan,Sarabenderer vaidhya muraikal[Seeroga sikichai]3rd edition pg no:39
- Agathiyar gunavagadam
- Nagamunivar thalai noi maruthuvam –siroroga vethi
- DR.K.S.Uthamarayan,Siddha maruthuvanga shurukkam,3rd edition 2003
- P.Ramachandran ,Agathiyar kanmagandam 300.p.no 34,
- Neer paichal roga nithanam
- Jeeva ratchamirtham[Nasika roga petham]
- Kanthasamy muthaliyar,Aathma ratchamirthamanum vaitheya sara sangiragam
- S.P.Ramachandran ,Thearaiyar neer kuri naei kuri vaithiyam
- Danvandhiri vaithiyam-p.no.95
- R.Thiyagarajan ,Thaeraiyar yamaga vaenba
- R.C.M ohan ,Pathartha guna cinthamani
- K.S.Murugaesha mudhaliyar ,Gunapadam muligai vaguppu ,2nd re-edition2006
- R.Theyagarajan, Gunapadam thathu jeeva vaguppu,pg no:373
- Agathiyar rathna churukkam 500
- Materia Medica Of India And Their Therapeutics
- Indian medicinal plants-vol 1&2 Dr.Nadkarni
- K.C.Bose,Pharmacopoiea indica

- Colour Atlas of Human Anatomy
- Gray's Anatomy - 13th Edition
- K. Sembulingam, Essentials of Human physiology , 2nd Edition
- Fauci braenwald, Kasper hauser, Longo, Jameson, Harrison's principle of Internal Medicine ,17th edition, pg no:205
- Satoskar ,Text Book of Pharmacology
- Fundamentals of Ear, Nose, Throat diseases - Dr. Ramalingam
- Encyclopaedia of Allergy and Environmental - Ellen Rother
- Dr. Harshmohan ,Text Book of Pathology, pg no:515
- Text Book of ENT Diseases - Eleventh Edition
- B. D. Chaurasia's Human Anatomy
- Allergies (Robert Eagle - 1981)
- Guyton's Text Book of Physiology
- Praveen kumar, Nichall clark, Clinical medicine 5th edition, pg no:205
- Dr.Michael swash,Dr.Michael glynn,Hutchinson's clinical methods, 22nd edition,pg no:54